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Rapid Scoping Review: What is known about the application of upstream and midstream health promotion approaches in the context of H1N1, COVID-19, and mpox pandemic preparedness and response?

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Please Note: An update of this review may be available. Access the most current version of this review by visiting the National Collaborating Centre for Methods and Tools COVID-19 Rapid Evidence Service at the above link.

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Executive Summary

Background

Health promotion is an essential component of effective public health practice. Health promotion involves implementing wide-reaching social and environmental interventions aimed at enabling individuals to increase control over – and improve – their health (Government of Canada, 2017; World Health Organization, 2023). These interventions have a spectrum of targets, from upstream interventions that act on economic, legal, and political structures to remove barriers and improve support, to downstream efforts focused on individual behaviour change.

While health promotion efforts are commonly incorporated into day-to-day public health practice, their implementation as part of health emergency preparedness and response is equally important (World Health Organization, 2022). Applying a health promotion lens may be particularly important to improving health and wellness outcomes, reducing health inequities, and fostering community resilience. This rapid scoping review, produced to support evidence-informed decision-making in public health, focuses on understanding how upstream and midstream approaches to health promotion have been applied in pandemic and emergency preparedness and response, including building healthy public policies, creating supportive environments, and strengthening community action.

This rapid scoping review includes evidence available up to January 25, 2023, to answer the question: **What is known about the application of upstream and midstream health promotion approaches in the context of H1N1, COVID-19, and mpox (formerly monkeypox) pandemic preparedness and response?**

It also includes evidence to address a secondary question: **What indicators of effectiveness have been reported that may identify promising upstream and midstream health promotion approaches?**

Key Points

- A wide variety of upstream and midstream health promotion approaches were included in this review (n = 23). Most focused on pandemic response efforts related to the COVID-19 pandemic (n=22), and one involved H1N1; none of the approaches identified addressed pandemic preparedness or were related to mpox.
- Most interventions included in this review (n=12) addressed secondary impacts of the pandemic and pandemic restrictions, such as agricultural and food support, social protection, employment, and mental health policies. Food access and food security were described most often, including the provision of food and/or food vouchers to those at risk for food insecurity. Federal legislation, financial support, regulatory flexibility (e.g., extended loan repayment deadlines and insurance enrolment periods), and international and private-public coordination within the agricultural sector were described to protect food supply chains. Emergency income assistance, eviction policies, wage subsidies, and unemployment benefits were reported to mitigate the impact of job loss due to the pandemic. Components of national acts that supported specific populations, such as older adults, people with disabilities, and people experiencing addiction or mental

health issues, were also described, such as reducing the maximum number of take-home drug overdose kits.
- Direct pandemic response approaches (n=13) included those to reduce the risk of transmission (n=3) and increase equitable access to testing (n=6) and vaccination (n=4).
    - Providing emergency sick leave, expanding telehealth use, and opportunities for isolation or physical distancing in congregate settings (e.g., homeless shelters) were described as key policies to reduce transmission risk.
    - Community partnerships were often leveraged to increase local access to testing, and mobile testing sites and drive-through high-volume testing centers were initiated to reduce barriers to testing.
    - Populations experiencing inequities in COVID-19 rates were prioritized in vaccination roll-out, although this was not always realized in local delivery.
- Populations targeted by upstream health promotion interventions in pandemic response included many vulnerable groups (e.g., priority populations for vaccinations, people experiencing homelessness, older adults, people with mental and substance use disorders) and rural, Indigenous, or underserved communities.
- Few indicators of the effectiveness of health promotion approaches were reported in the included studies. Most indicators were simple counts of intervention reach (e.g., how many tests/vaccines were administered, etc.) (n=10) and did not address more complex outcomes (e.g., how interventions were delivered, whether equity goals were realized, etc.). Two studies reported on feasibility.

Overview of Evidence and Knowledge Gaps

- The interventions included in this review were implemented predominately at national/federal (n=10) or local/regional/municipal (n=11) levels of government, followed by provincial/territorial/state levels (n=5). Upstream "building healthy public policy" (n=15) was the component of health promotion prioritized most often, followed by more midstream "strengthening community action" (n=7) and "creating supportive environments" (n=3) components.
- Public health was involved in more of a supporting role for most interventions included in this review (n=21), as these interventions were either driven by other departments (e.g., departments of finance, agriculture, health, etc.) through legislation (e.g., the Families First Coronavirus Response Act and Coronavirus Aid, Relief, and Economic Security (CARES) Act, passed in the United States to address deficiencies in healthcare financing) or led by other partners in multisectoral collaboratives (e.g., community-academic-led testing initiatives). Public health had more of a lead role (n=4) in interventions aimed at increasing equitable access to vaccination.
- The interventions included in this review addressed the following equity dimensions, as framed by PROGRESS-Plus: socioeconomic status (n=17); place of residence (n=12); race, ethnicity, culture, and language (n=4); occupation (n=3); gender/sex (n=1); and "plus" (n=6; e.g., personal characteristics associated with discrimination, such as age and disability). Dimensions of religion, education, and social capital were not addressed.
- Several major federal-level policy reforms, mainly reported in the United States, were enacted to address deficiencies in healthcare financing and improve health and quality of life and were included under more than one category of direct or secondary pandemic

response and health promotion goals. These included Acts and provisions to cover the cost of testing, expand telehealth services, ensure paid sick leave, etc.

- Health promotion approaches targeting food insecurity focused on agricultural production, the functioning of the food chain, and responses to consumer demand were frequently reported. National/federal level interventions included financial support for the sector and production subsidies; at local/regional levels, community programs were established to deliver food boxes for those deemed food insecure.
- Several interventions addressed access to COVID-19 testing and vaccination, where common components included conveniently located and easy-to-access sites, equitable allocation strategies, and community engagement. The indicators of effectiveness for these interventions included vaccine coverage (n=3) and the number of tests performed (n=5). Two studies indicated that the approaches described were feasible to deliver and scale.
- Indicators of effectiveness were generally not reported for interventions to reduce the risk of transmission or interventions to mitigate secondary impacts. One study reported the number of individuals who participated in various quarantine programs, and one reported the number of food boxes delivered.
- A limitation of this rapid scoping review was that an exhaustive jurisdictional scan to confirm and augment published interventions was not conducted. In addition, the policies and programs described here were active at the time of individual articles' publication; many policies may have been temporary and been terminated or evolved.

**Note: total numbers may add to more than the number of included studies, as some interventions addressed more than one category.*

Methods

A description of the development of the National Collaborating Centre for Methods and Tools' Rapid Evidence Service, including an overview of the rapid review process and rationale for methodological decisions, has been published (Neil-Sztramko *et al.*, 2021). Rapid scoping reviews are used to map the concepts underpinning a research area and the main sources and types of evidence available. Scoping review methodology, as described by Arksey and O'Malley, was also used to guide this rapid scoping review (Arksey & O'Malley, 2005).

Research Question

What is known about the application of upstream and midstream health promotion approaches in the context of H1N1, COVID-19, and mpox pandemic preparedness and response?

Secondary Question

What indicators of effectiveness have been reported that may identify promising upstream and midstream health promotion approaches?

Search

On January 25, 2023, the following databases were searched using key terms: "policy", "prepare", "national", "local", "regional", "government", "community", "engage", "decision", "COVID-19", "pandemic", "monkeypox", "mpox", "MPV", "swine flu".

- MEDLINE database
- EMBASE database
- Ovid Emcare
- Global Health
- Political Science Database
- PAIS Index
- Trip Medical Database

The NCCMT also issued a call to Senior Decision Makers across Canada to share relevant published or unpublished reports, research, or policy publications on the application of upstream and midstream health promotion in the context of COVID-19, H1N1, or mpox.

A copy of the full search strategy is available in Appendix 1.

Study Selection Criteria

English-language, peer-reviewed sources and sources published ahead of print before peer review were eligible for inclusion. Sources reporting surveillance of disease prevalence, opinions or editorials, and modelling studies were excluded.

	Inclusion Criteria	Exclusion Criteria
Population	Government and/or public health systems at local/regional/municipal, provincial/territorial/state, or national levels	Tertiary healthcare systems
Concept	Health promotion (upstream and midstream approaches)*; pandemic preparedness and response	Downstream health promotion approaches (focused on changing individual knowledge or behaviours, e.g., communication campaigns or education initiatives, individual-level interventions)
Context	H1N1, COVID-19, mpox pandemics	Non-pandemic infectious diseases; other pandemics / outbreaks; climate change; natural disasters; and extreme weather; and other public health issues (e.g., opioid crisis)
Setting	OECD member countries	Non-OECD member countries
Design	Primary studies; review articles; governmental reports; research or policy publications from national (e.g., CPHA) or international (e.g., WHO, IANPHI, PAHO) health organizations	Editorials; opinion pieces published outside journals (e.g., mass media, websites like "the conversation", etc.); modelling studies
Languages	English and French	

*Upstream health promotion approaches target social, structural, and ecological determinants of health; midstream approaches target living conditions and ecosystems (e.g., physical and built, social, economic and work, and service environments) (Public Health Agency of Canada, 2021; Public Health Agency of Canada 2022). Interventions within these approaches may include, but are not limited to:

- Poverty and income inequity reducing policies;
- Decolonizing and anti-racism policies;
- Treaty rights, self-determination, and self-governance for Indigenous Peoples;
- Housing, land and water use, and transportation policies;
- Culturally safe health and social services; and
- Affordable and high-quality childcare.

Screening

Title/abstract screening was facilitated by using Artificial Intelligence (AI) on the DistillerSR reference screening platform. Records were screened in duplicate by two reviewers using a reranking function that reprioritizes relevant references to appear at the top of the screening list. After manually screening approximately half of all records, an AI screening function integrated within DistillerSR was used to determine the probability of the remaining unscreened studies being included through manual review. AI screening was then used as an additional screener to exclude studies with the lowest probability of being included. All studies screened by AI were verified by manual review. In case of discrepancies between manual and AI review, a third reviewer acted as arbitrator.

Data Extraction and Synthesis

Data relevant to the research question, such as study design, country, context, level of intervention (i.e., at what level of government was the intervention implemented), target population, health promotion priority, level of effect, equity, intervention details, and indicators of effectiveness were extracted, when reported. We summarized the results narratively to provide an overview of trends in the included literature.

The quality of included studies was not assessed, as this scoping review reports on what has been described in the literature and does not report study findings.

Citizen Engagement in the Review Process

As part of the NCCMT's call to Senior Decision Makers for relevant published or unpublished reports, research, or policy publications, one Senior Decision Maker was further engaged as a professional partner to provide perspectives that were not captured by the research literature included in this rapid scoping review.

Findings

Summary of Evidence

A total of 23 sources were identified in this rapid scoping review. The findings from across these studies are organized by health promotion aim: reducing risk of exposure or transmission, increasing equitable access to testing, increasing equitable access to vaccination, and mitigating secondary impacts of the pandemic and/or pandemic response measures. One report targeted more than one health promotion aim.

Research Question	Evidence included	
What is known about the application of upstream and midstream health promotion approaches in the context of H1N1, COVID-19, and mpox pandemic preparedness and response?	Synthesis Single studies Policy analyses	1 14 8
What indicators of effectiveness have been reported that may identify promising upstream and midstream health promotion approaches?	Single studies	8

Table 1. Upstream and midstream health promotion approaches aiming to support *reducing the risk of exposures or transmission*

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Malmusi, D., Pasarín, M.I., Marí-Dell'Olmo, M., Artazcoz, L., Diez, E., Tolosa, S., ... Borrell, C. (2022). Multi-level policy responses to tackle socioeconomic inequalities in the incidence of COVID-19 in a European urban area. *International journal for equity in health, 21*(1), 28.	Feb 19, 2022 Case study	Spain General population	Local / regional / municipal Building healthy public policy	Supporting: A consortium of municipal and regional governments (public health surveillance, protection and promotion, social services, education, healthcare services)	• **P**lace of residence • **S**ocioeconomic status	Several policy interventions were enacted, locally, to address socioeconomic inequalities or socially deprived populations: • **Health Hotels:** Converted hotels assisted in accelerating hospital discharges and/or allowing those with mild infection and inadequate housing conditions to quarantine. • **Quarantine Support Programs:** Families in need were referred by social services and provided home food delivery, PPE, personal hygiene products, home cleaning and disinfection services, waste disposal, and dog walking. • **Special facilities for those experiencing homelessness and substance use disorders:** Social Services teams matched people to appropriate facilities to receive meals, clothing, and showers.	From Mar - Jun 2021, 9 health hotels assisted 2881 people. By Jul 2021, 9902 people in 2796 apartments had received a Quarantine Support Program delivery. 449 spaces for those experiencing homelessness were set up.
Schmidt, E., Schalk, J., Ridder, M., van der Pas, S., Groeneveld, S., & Bussemaker, J. (2022). Collaboration to combat COVID-19: policy responses and best practices in local integrated care settings. Journal of health organization and management. Epub ahead of print.	Jan 18, 2022 Case study	The Netherlands People experiencing homelessness	Local / regional / municipal Building healthy public policy	Supporting: 1 arm of 3 arm integrated care (also primary care, community partners)	• **S**ocioeconomic status • **Plus**: *people experiencing homelessness*	Occupants of homeless shelters were stratified by risk of severe COVID-19; high risk occupants were given single room occupancy in existing shelters and low-risk occupants were transferred to empty care-type facilities (e.g., daycares) with low multi-resident occupancy.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Gaffney, A., Himmelstein, D.U., & Woolhandler, S. (2020). COVID-19 and US Health Financing: Perils and Possibilities. *International journal of health services, 50*(4), 396–407.	Jun 9, 2020 Case study	United States General public	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level	• **S**ocioeconomic status	Several legislation and policy reforms were enacted in the US during COVID-19 to address deficiencies in healthcare financing: • **Families First Coronavirus Response Act:** uses state Medicaid programs and the National Disaster Medical System to cover the cost of COVID-19 testing and related health care visits for the uninsured and eliminate costs for the insured; requires employers to provide workers with 10 days emergency sick leave for COVID-19. • Provisions to **expand use of telehealth**: allowed providers to be reimbursed by Medicare and private insurers for telehealth services.	N/R

Abbreviations: PPE: personal protective equipment; N/R: none reported.

Table 2. Upstream and midstream health promotion approaches aiming to support *increasing equitable access to testing*

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Chamie, G., Prado, P., Oviedo, Y., Vizcaíno, T., Arechiga, C., Marson, K., ... Marquez, C. (2022). Reproducibility and implementation of a rapid, community-based COVID-19 "test and respond" model in low-income, majority-Latino communities in Northern California. *PloS one, 17*(10), e0276257.	Oct 27, 2022 Case study	United States Latinx people from rural and suburban low-income communities	Local / regional / municipal Strengthening community action	Supporting: Provided training for community leaders' PPE use and conducted rapid antigen testing.	• **P**lace of residence • **R**ace / ethnicity / culture / language • **S**ocioeconomic status	Community-academic partnership, "Latino COVID-19 Collaborative" hosted mass "test and response" events in well-known, central locations during days and times that were convenient for essential workers (e.g., weekends, evenings) with Spanish-English speaking staff. Participants were provided free walk-up testing and did not require identification. In the event of a positive test, Local Public Health worked alongside The Collaborative to provide isolation and quarantine guidance and referral to support services. Financial assistance was available to assist with isolation.	1217/1482 (82%) eligible community members attended the mass testing event. Average time from registration to completion of testing was 16 minutes.
McCollum, C.G., Creger, T.N., Rana, A.I., Matthews, L.T., Baral, S.D., Burkholder, G.A., ... Mugavero, M. J. (2022). COVID Community-Engaged Testing in Alabama: Reaching Underserved Rural Populations Through Collaboration. *American journal of public health, 112*(10), 1399–1403.	Sep 14, 2022 Case study	United States People living in rural Alabama	Provincial / territorial / state Strengthening community action	Supporting: • Funding from Alabama Department of Public Health, delivered by University of Alabama at Birmingham Center for AIDS Research and local community partners	• **P**lace of residence	As part of the National Institutes of Health's Rapid Acceleration of Diagnostics-Underserved Populations initiatives, descriptive epidemiology was used to prioritize rural counties most impacted by COVID-19. From Oct - Feb 2020, community health workers provided PCR testing services, including point-of-care rapid testing to rural counties and jails, avoiding mandatory isolation for new inmates with a negative test and informing quarantine measures in a timely manner for those with a positive test. This program was scalable for subsequent waves of the pandemic.	23,394 tests were conducted in 55 of 67 counties; 14,667 (62%) tests were in rural counties, 3852 tests were in jails. The testing procedures were scalable to meet testing demands of Delta and Omicron variant surges. The average weekly positivity rate increased to 13.9% during Delta and 25.8% during Omicron (20.7% higher positivity rate (95% CI = 19.4, 21.9) than baseline).

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Malmusi, D., Pasarín, M.I., Marí-Dell'Olmo, M., Artazcoz, L., Diez, E., Tolosa, S., ... Borrell, C. (2022). Multi-level policy responses to tackle socioeconomic inequalities in the incidence of COVID-19 in a European urban area. *International journal for equity in health, 21*(1), 28.	Feb 19, 2022 Case study	Spain General population	Local / regional / municipal Building healthy public policy	Supporting: A consortium of municipal and regional governments (public health surveillance, protection and promotion, social services, education, healthcare services)	• **P**lace of residence • **S**ocioeconomic status	Mass screening campaigns were offered in high incidence areas. Free, voluntary testing points were opened in community centers for neighbourhood residents over 2-3 days.	5394 tests were conducted at mass screening events, held in 4 neighborhoods; 151 were positive cases.
Jiménez, J., Parra, Y.J., Murphy, K., Chen, A.N., Cook, A., Watkins, J., ... Long, T. (2022). Community-Informed Mobile COVID-19 Testing Model to Addressing Health Inequities. *Journal of public health management and practice, 28*(Suppl 1), S101–S110.	Jan 2022 Case study	United States Underserved communities within New York City	Local / regional / municipal Strengthening community action	Supporting: Supported testing operations	• **S**ocioeconomic status	A community-informed mobile COVID-19 testing strategy was implemented, beginning with outdoor testing tents in the summer months and moving to ambulance-like mobile clinics in the colder months. Funding was provided by federal, state and city resources; community partners assumed operations. The local health department analyzed the epidemiology of COVID-19 in areas of concern with elevated positivity rates.	From Dec 1 - Apr 30, 2021, 150,351 individuals were provided tests, resulting in 274,083 total tests processed.

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Appa, A., Chamie, G., Sawyer, A., Baltzell, K., Dippell, K., Ribeiro, S., ... Greenhouse, B. (2021). SARS-CoV-2 PCR and antibody testing for an entire rural community: methods and feasibility of high-throughput testing procedures. *Archives of public health, 79*(1), 125.	Jul 7, 2021 Case study	United States Rural community	Local / regional / municipal Strengthening community action	Supporting: Supported testing operations	• **P**lace of residence	A community-led, drive-through pop-up model for safe, high-volume, comprehensive PCR and antibody testing was offered in a rural community. The model included participant pre-registration and triage to "lanes" based on symptom status, community engagement, and skilled testing teams and volunteers. Program stakeholders included a community-based health organization, the Department of Public Health, and the Fire Department.	Number of participants tested: 1840 tested in 4 days; a median of 57 (interquartile range (IQR): 47-67) tested per hour. The authors concluded that their model was feasible and may be used to augment disease surveillance in rural areas.
Hengel, B., Causer, L., Matthews, S., Smith, K., Andrewartha, K., Badman, S., ... Guy, R. (2021). A decentralised point-of-care testing model to address inequities in the COVID-19 response. *The Lancet Infectious diseases, 21*(7), e183–e190.	Dec 23, 2020 Case study	Australia General population, rural / remote	Local / regional / municipal Strengthening community action	Supporting: Public Health Laboratory Network provided guidance on testing protocols; public health representative on jurisdictional committees.	• **P**lace of residence	A decentralised point-of-care PCR testing model was implemented in Aboriginal and Torres Strait Islander communities. A hub-and-spoke model was established (i.e., a "hub" health service installed the testing platform, smaller nearby community "spokes" collected and sent specimens for testing) at sites selected by jurisdictional and national governance committees. The program was funded by the Australian Government, overseen by the National Aboriginal and Torres Strait Islander COVID-19 Advisory Group, a subcommittee of the Australian Health Protection Principal Committee (i.e., the key national decision-making committee for health emergencies), and guided by a Program Clinical Advisory Group. Each jurisdiction adapted the program framework to suit local structures.	N/R

Abbreviations: PPE: personal protective equipment; N/R: none reported; PCR: polymerase chain reaction.

Table 3. Upstream and midstream health promotion approaches aiming to support *increasing equitable access to vaccination*

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Kholina, K., Harmon, S.H.E., & Graham, J.E. (2022). An equitable vaccine delivery system: Lessons from the COVID-19 vaccine rollout in Canada. *PloS one, 17*(12), e0279929.	Dec 30, 2022 Mixed methods	Alberta, Ontario, Nova Scotia, Yukon Priority vaccination populations	Provincial / territorial / state Building healthy public policy	Lead: Public Health responsible for vaccine delivery at the provincial local level.	• **P**lace of residence • **R**ace / ethnicity / culture / language • **O**ccupation	Prior to vaccine availability, the National Advisory Committee on Vaccinations (NACI) released federal vaccine rollout guidance prioritizing the elderly and those with high-risk health conditions, frontline healthcare workers, those living and working in long-term care and congregant living facilities, essential service workers, and those whose living or working conditions put them at elevated risk and where infection could have disproportionate consequences. Generally, provinces used an age-based, medical condition, and healthcare occupation rollout despite the known impact of socio-demographic factors, such as ethnicity and income. Some jurisdictions in Ontario offered clinics for residents of high transmission areas (e.g., hotspots) and Nova Scotia offered clinics specific to African-Nova Scotians.	Vaccine coverage by the end of the initial rollout was overall successful: 67% in Alberta, 74% in Ontario, 77% in Nova Scotia, and 73% in Yukon. Coverage for specific priority populations were not reported. Despite guidance from NACI for prioritization of Indigenous peoples, the provinces generally followed an age-based rollout.

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Selembo, T.D., Talbot, E.A., Courtine, C.T., Daly, E.R., Hull, T.W., & Durzy, K.J. (2022). Ensuring Equitable COVID-19 Vaccine Allocation in New Hampshire: The First Eight Months toward a New Era. *Vaccines, 10*(9), 1421.	Aug 29, 2022 Case study	United States Vulnerable groups	Provincial / territorial / state Strengthening community action	Lead	• **P**lace of residence • **R**ace / ethnicity / culture / language • **S**ocioeconomic status	The state of New Hampshire created a Vaccine Allocation Strategy Branch (VASB), which worked with other public health and state departments, key advocacy partners, and the community to establish an equitable vaccine allocation strategy. Foundational principles (e.g., ensure maximum benefit, equal concern, mitigation of health inequities, fairness, transparency, evidence-based) were applied to create a three-phased allocation strategy, beginning with those at highest risk of morbidity and mortality. Equity was a crosscutting consideration across all phases: 10% of weekly supply was distributed to disproportionately impacted and highly vulnerable populations, identified through a COVID-19 Community Vulnerability Index and the VASB's Guidelines for Equity Allocation (e.g., racial or ethnic minorities, experiencing homelessness, low-income). A minimum of 1000 vaccine doses were also always reserved for rapid "hot spot" deployment.	N/R
Malmusi, D., Pasarín, M.I., Marí-Dell'Olmo, M., Artazcoz, L., Diez, E., Tolosa, S., ... Borrell, C. (2022). Multi-level policy responses to tackle socioeconomic inequalities in the incidence of COVID-19 in a European urban area. *International journal for equity in health, 21*(1), 28.	Feb 19, 2022 Case study	Spain General population	Local / regional / municipal Building healthy public policy	Supporting: A consortium of municipal and regional governments (public health surveillance, protection and promotion, social services, education, healthcare services)	• **P**lace of residence • **S**ocioeconomic status	Vaccination scheduling support points and street points for vaccination without appointment were established. Public Health joined forces with municipal services in low vaccination coverage areas to set up a network of additional vaccine locations, directly helping people schedule appointments.	1689 people were vaccinated at 25 support points; 2081 were vaccinated at 19 street points. Vaccination rates among all age coverage groups increased: >90% coverage among those >70 years; 82-95% coverage among those from initial low coverage areas; reduction of the gap between extreme coverages (32% to 15%).

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Gupta, R. (2011). Enhancing community partnerships during a public health emergency: the school-located vaccination clinics model in Kanawha County, WV during the 2009 influenza A (H1N1) pandemic. *The West Virginia medical journal, 107*(6), 28–34.	Nov 2011 Case study	United States School-aged children	Local / regional / municipal Strengthening community action	Lead	• **Plus**: *age*	Through a collaboration between the local Health Department, its county-wide H1N1 task force, and the local school board, free, school-located vaccination clinics were established. The clinics involved teams of school nurses and staff, county and city paramedics, and community volunteers. The program was continued on an annual basis.	A total of 169 clinics were offered, over 8 weeks; 21,000 doses were administered, with an average vaccination rate of 49%.

Abbreviations: NACI: National Advisory Committee on Vaccinations; N/R: none reported; VASB: Vaccine Allocation Strategy Branch.

Table 4. Upstream and midstream health promotion approaches aiming to support *mitigating secondary impacts*

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Garba, N.A., Sacca, L., Clarke, R.D., Bhoite, P., Buschman, J., Oller, V., ... Brown, D.R. (2022). Addressing Food Insecurity during the COVID-19 Pandemic: Intervention Outcomes and Lessons Learned from a Collaborative Food Delivery Response in South Florida's Underserved Households. *International journal of environmental research and public health, 19*(13), 8130.	Jul 2, 2022 Case study	United States Miami Dade County's underserved population	Local / regional / municipal Creating supportive environments	Supporting: University hospital network sponsored community outreach program	• **S**ocioeconomic status	NeighborhoodHELP, a community medical referral program, responded to the needs of the households in their program by delivering **bi-weekly culturally appropriate food boxes** for families assessed to be food insecure during the stay-at-home mandate.	1543 food boxes were delivered to 289 participating households (representing 898 household members), over 14 months.

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Curcio, F. & Marino, D. (2022). The Political Response to the COVID-19 Crisis in Italy: A First Assessment for the National Food System. *Sustainability, 14*(12), 7241.	Jun 13, 2022 Policy analysis	Italy, EU General population	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level	• **O**ccupation • **G**ender / sex • **S**ocioeconomic status • **Plus**: *age*	The EU introduced several exceptional pandemic response measures for the agri-food sector, including low-interest loans to farmers to cover operating costs, funds for rural development, state aid for farmers and food-processing businesses, aid for private food storage, and flexibility on administrative requirements (e.g., payment deadlines, controls on agricultural holdings). In Italy, two Budget Laws were passed to increase the National Fund for the distribution of food products for vulnerable people, introduce a tax on consumption of sugary drinks, establish funds to increase the competitiveness of agricultural, fishing, and aquaculture sectors, support youth and female-run agricultural enterprises (e.g., tax exemptions, zero-interest mortgages), and reduce VAT on takeaway and delivery.	N/R
Michener, J. (2022). Race, power, and policy: understanding state anti-eviction policies during COVID-19. *Policy and Society, 41*(2), 231–246.	Mar 22, 2022 Policy analysis	United States General population	Provincial / territorial / state Creating supportive environments	Supporting: Legislation passed at the state level	• **P**lace of residence • **R**ace / ethnicity / culture / language • **S**ocioeconomic status	43 states introduced COVID-19 eviction policies, prohibiting all or some part of the eviction process. These policies were implemented at varying times and to varying degrees across the country: • Banning courts from holding eviction hearings. • Prohibiting law enforcement personnel from enforcing eviction orders. • Prohibiting landlords from giving notice of or filing an eviction action. • Prohibiting evictions where the cause of action was for non-payment of rent. • Requiring landlords filing evictions to affirm that the property or tenant are not covered by a CARES Act or CDC eviction moratorium. • Prohibiting evictions for tenants experiencing economic or health-related hardships due to COVID-19. • Prohibiting the collection of late fees or the bringing of an action for late fees.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Jiang, X., Chen, Y., & Wang, J. (2021). Global Food Security under COVID-19: Comparison and Enlightenment of Policy Responses in Different Countries. *Foods, 10*(11), 2850.	Nov 18, 2021 Policy analysis	International General public, agricultural sector	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level	• **S**ocioeconomic status	Main policy responses in the field of food security included producer-, consumer-, and trade-oriented measures: • North America: unconditional cash transfers, production subsidies, financial support through public banks, support to productive assets, and risk management measures. • Europe: unemployment compensation, financial support through public banks, unconditional cash transfers, employment programs, access to credit, public/mutual fund and contingent risk financing, production subsidies, institutional measure, agricultural expenditure in the national budget, export quota, import bans, import tariff, macroeconomic policy.	N/R
Hassen N. (2022). Leveraging built environment interventions to equitably promote health during and after COVID-19 in Toronto, Canada. *Health promotion international, 37*(2), daab128.	Aug 23, 2021 Case study	Toronto, Ontario, Canada General population	Local / regional / municipal Creating supportive environments	Lead: Toronto Public Health was involved in developing each intervention.	• **P**lace of residence • **R**esidents of urban	ActiveTO is a suite of programs intended to facilitate **safer active transportation in public spaces for exercise, leisure, occupational purposes and commuting**. The initiative includes: • The Major Road Closure program: recurring short-term closures of major streets adjacent to highly accessed trails to provide more room for walking and cycling. • The Quiet Street initiative: implementation of lower speed limits and temporary barricades to allow those who walk, run or cycle to use the roads more safely, alongside local traffic. • Expanding the cycling network: increasing the availability of bike lanes along the city's major routes from +/- 15km to +/- 40 km. Increasing the width of sidewalks in select areas within the high-density downtown core.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Villalobos Dintrans, P., Browne, J., & Madero-Cabib, I. (2021). It Is Not Just Mortality: A Call From Chile for Comprehensive COVID-19 Policy Responses Among Older People. *The journals of gerontology, 76*(7), e275–e280.	Aug 21, 2021 Policy analysis	Chile Older adults	National / federal Building healthy public policy	Supporting: Policies were delivered by local public health under the Ministry of Health	• **S**ocioeconomic status • **Plus:** *age, means tested individuals and families*	**Food supply campaign** for vulnerable families (many of which are multi-generational, including elderly members): • Home delivery of food, prescription drugs and basic supplies during national quarantine **Emergency Family Income** for vulnerable families: • $120 USD/person (up to 4 in the household) monthly for 4 months **Sanitary Houses** for those non-disabled older adults living in long-term care facilities who tested positive for COVID-19 and were unable to isolate.	N/R
Pereira, A.M.M., Machado, C.V., Veny, M.B., Juan, A.M.Y., & Recio, S.N. (2021). Governance and state capacities against COVID-19 in Germany and Spain: national responses and health systems from a comparative perspective. Ciencia & saude coletiva, 26(10), 4425–4437.	May 26, 2021 Policy analysis	Germany, Spain General population	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level	• **P**lace of residence	Germany enacted a federally funded **Economic Stabilizatio**n program to include economic support to small business owners and those self-employed, liquidity support for medium-to-large companies through federally backed lines of credit and re-financing of large loans. Existing individual unemployment and social assistance programs including child support and personal income support were largely expanded. Spain enacted a "**Social Shield**" (with EU support) including: guaranteed housing, prohibition of essential service interruption, social assistance to vulnerable families and populations, promoting equality and protecting victims of violence, protecting works and the self-employed, expanding and relaxing access to unemployment insurance and measures to protect economic activities. As the pandemic progressed, Spain included a minimum vital income program for vulnerable households.	N/R

Gruère, G., & Brooks, J. (2021). Viewpoint: Characterising early agricultural and food policy responses to the outbreak of COVID-19. *Food policy, 100*, 102017.	Dec 30, 2020 Policy analysis	International Agricultural sector, general population	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level, focus on the agricultural sector	• **O**ccupation • **S**ocioeconomic status	The OECD organized early **agricultural and food policy measures**, taken by governments in response to COVID-19: Information and co-ordination measures:* • Websites and campaigns, e.g., labour database linking farming families with available relief workers if they contracted COVID-19 (Ireland). • Monitoring the agriculture market, e.g., Ministry of Agriculture monitored access to food in the international market (Norway). • Coordination with the private sector, e.g., industry-government COVID-19 working group established (Canada). • International coordination, e.g., G20 agriculture ministers adopted a statement, discouraging trade restrictions and encouraging improving food chain function and supporting affected populations. Agriculture and food support measures:* • General financial support for the sector. • Specific product support, e.g., compensation schemes for horticultural produces (Netherlands). • Administrative and regulatory flexibility, e.g., extended enrolment periods for agricultural insurance (Spain). • General support applicable to agriculture and food. • Overall economic measures, e.g., stimulus packages (New Zealand). • Social safety nets. Food assistance and consumer support: • Food assistance, e.g., food vouchers for low-income families (UK). • Market measures to support consumers. *The most frequently observed measures among OECD countries. Most measures were new and temporary.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Hick, R. & Murphy, M.P. (2021). Common shock, different paths? Comparing social policy responses to COVID-19 in the UK and Ireland. *Social & Policy Administration, 55*(2), 312–325.	Dec 2, 2020 Case study	United Kingdom, Ireland General population	National / federal Building healthy public policy	Supporting: Legislation passed at the federal level	• **S**ocioeconomic status	Both countries introduced policies to support income through illness, job retention, and unemployment programs: • Wait times for **Statutory Sick Pay** were reduced to 1 day. • **The Pandemic Unemployment Payment** was initiated in Ireland, whereas in the rest of the UK, pandemic economic relief was piggybacked onto the existing Universal Credit allowance. Job seeking requirements were removed.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Abdoul-Azize, H.T., & El Gamil, R. (2021). Social Protection as a Key Tool in Crisis Management: Learnt Lessons from the COVID-19 Pandemic. *Global social welfare, 8*(1), 107–116.	Sep 1, 2020 Systematic review	International General population, vulnerable groups, elderly	National / federal Building healthy public policy	Supporting: • Legislation passed at the federal level	• **S**ocioeconomic status	US, Spain, Italy, Germany, UK, Chile, Turkey implemented several social protection programs - i.e., addressing hunger, poverty, social inequality, and economy instability exacerbated by the COVID-19 pandemic. The types of programs included: • Social assistance* (grocery vouchers, cash transfers, in-kind assistance (e.g., food, hygiene, protective products), non-taxable subsidies); • Social insurance (paid sick leave, unemployment benefits, utility waivers and postponed tax, debt, and social insurance payments); and • Labor market (wage subsidies, reimbursement of employers' social insurance contributions, government grant to cover employees' wages). *Social assistance programs were the most frequent across the studied countries. Beneficiaries included families impacted by school closures, individuals with or isolating because of COVID-19, the elderly, people with chronic illnesses, those unemployed due to COVID-19, employees in specific sectors (e.g., teachers, agricultural workers), vulnerable groups, and/or the extreme poor. Social protection programs, implemented as an economic stimulus, became a strategic tool in countries' responses to mitigating short-, middle-, and long-term negative consequences of the COVID-19 pandemic.	N/R

Reference	Date Released & Study Design	Setting & Population	Level of Intervention & Health Promotion Component	Public Health's Role	PROGRESS-Plus	Intervention / Program Description	Indicators of Effectiveness
Goldman, M.L., Druss, B.G., Horvitz-Lennon, M., Norquist, G.S., Kroeger Ptakowski, K., Brinkley, A., … Dixon, L. B. (2020). Mental Health Policy in the Era of COVID-19. *Psychiatric services, 71(11)*, 1158–1162.	Jun 10, 2020 Policy analysis	United States People with mental and substance use disorders	National / federal Building healthy public policy	Supporting: • Legislation passed at the federal level	• **S**ocioeconomic status • **Plus:** *mental health*	This article describes changes in health policy, prompted by COVID-19, with application to **mental health**: • **Coronavirus Aid, Relief, and Economic Security (CARES) Act**: includes appropriations to the Substance Abuse and Mental Health Services Administration act to respond to the pandemic (e.g., new funding for grants, emergency response activities, and suicide prevention). ○ E.g., exceptions regarding maximum take-home drug doses, need for in-person evaluations for new prescriptions, etc.	N/R
Young, H.M., Quinn, W., Brassard, A., Gualtieri, C., & Reinhard, S. (2020). COVID-19 Pandemic Spurs Policy Changes Benefiting Older Adults. *Journal of gerontological nursing, 46*(6), 19–23.	Jun 1, 2020 Policy analysis	United States Older adults	National / federal; provincial / territorial / state Building healthy public policy	Supporting: • Legislation passed at the federal level	• **Plus**: *older adults*	This article described federal and state policy changes, made in response to COVID-19, that affect the health care and quality of life for older adults. These policies, generally, aimed to increase access and provide additional funding for essential services and support; many were temporary. **Families First Coronavirus Response Act**: • Provided additional funding for nutrition services programs. **CARES Act**: • Provided funding for home- and community-based supports for older adults and people with disabilities.	N/R

Abbreviations: CARES: Coronavirus Aid, Relief, and Economic Security Act; CDC: Centers for Disease Control and Prevention; EU: European Union; N/R: none reported; NACI: National Advisory Committee on Immunization; OECD: The Organization for Economic Cooperation and Development.

References

Abdoul-Azize, H.T., & El Gamil, R. (2021). Social Protection as a Key Tool in Crisis Management: Learnt Lessons from the COVID-19 Pandemic. *Global social welfare, 8*(1), 107–116.

Appa, A., Chamie, G., Sawyer, A., Baltzell, K., Dippell, K., Ribeiro, S., ... Greenhouse, B. (2021). SARS-CoV-2 PCR and antibody testing for an entire rural community: methods and feasibility of high-throughput testing procedures. *Archives of public health, 79*(1), 125.

Arksey H. & O'Malley L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology: Theory and Practice, 8*(1), 19–32.

Chamie, G., Prado, P., Oviedo, Y., Vizcaíno, T., Arechiga, C., Marson, K., ... Marquez, C. (2022). Reproducibility and implementation of a rapid, community-based COVID-19 "test and respond" model in low-income, majority-Latino communities in Northern California. *PloS one, 17*(10), e0276257.

Curcio, F. & Marino, D. (2022). The Political Response to the COVID-19 Crisis in Italy: A First Assessment for the National Food System. *Sustainability, 14*(12), 7241.

Gaffney, A., Himmelstein, D.U., & Woolhandler, S. (2020). COVID-19 and US Health Financing: Perils and Possibilities. *International journal of health services, 50*(4), 396–407.

Garba, N.A., Sacca, L., Clarke, R.D., Bhoite, P., Buschman, J., Oller, V., ... Brown, D.R. (2022). Addressing Food Insecurity during the COVID-19 Pandemic: Intervention Outcomes and Lessons Learned from a Collaborative Food Delivery Response in South Florida's Underserved Households. *International journal of environmental research and public health, 19*(13), 8130.

Goldman, M.L., Druss, B.G., Horvitz-Lennon, M., Norquist, G.S., Kroeger Ptakowski, K., Brinkley, A., ... Dixon, L. B. (2020). Mental Health Policy in the Era of COVID-19. *Psychiatric services, 71(11)*, 1158–1162.

Government of Canada. (2017, November 14). Ottawa Charter for Health Promotion: An International Conference on Health Promotion.

Gruère, G., & Brooks, J. (2021). Viewpoint: Characterising early agricultural and food policy responses to the outbreak of COVID-19. *Food policy, 100*, 102017.

Gupta, R. (2011). Enhancing community partnerships during a public health emergency: the school-located vaccination clinics model in Kanawha County, WV during the 2009 influenza A (H1N1) pandemic. *The West Virginia medical journal, 107*(6), 28–34.

Hassen N. (2022). Leveraging built environment interventions to equitably promote health during and after COVID-19 in Toronto, Canada. *Health promotion international, 37*(2), daab128.

Hengel, B., Causer, L., Matthews, S., Smith, K., Andrewartha, K., Badman, S., ... Guy, R. (2021). A decentralised point-of-care testing model to address inequities in the COVID-19 response. *The Lancet Infectious diseases, 21*(7), e183–e190.

Hick, R. & Murphy, M.P. (2021). Common shock, different paths? Comparing social policy responses to COVID-19 in the UK and Ireland. *Social & Policy Administration, 55*(2), 312–325.

Jiang, X., Chen, Y., & Wang, J. (2021). Global Food Security under COVID-19: Comparison and Enlightenment of Policy Responses in Different Countries. *Foods, 10*(11), 2850.

Jiménez, J., Parra, Y.J., Murphy, K., Chen, A.N., Cook, A., Watkins, J., ... Long, T. (2022). Community-Informed Mobile COVID-19 Testing Model to Addressing Health Inequities. *Journal of public health management and practice, 28*(Suppl 1), S101–S110.

Kholina, K., Harmon, S.H.E., & Graham, J.E. (2022). An equitable vaccine delivery system: Lessons from the COVID-19 vaccine rollout in Canada. *PloS one, 17*(12), e0279929.

Malmusi, D., Pasarín, M.I., Marí-Dell'Olmo, M., Artazcoz, L., Diez, E., Tolosa, S., ... Borrell, C. (2022). Multi-level policy responses to tackle socioeconomic inequalities in the incidence of COVID-19 in a European urban area. *International journal for equity in health, 21*(1), 28.

McCollum, C.G., Creger, T.N., Rana, A.I., Matthews, L.T., Baral, S.D., Burkholder, G.A., ... Mugavero, M. J. (2022). COVID Community-Engaged Testing in Alabama: Reaching Underserved Rural Populations Through Collaboration. *American journal of public health, 112*(10), 1399–1403.

Michener, J. (2022). Race, power, and policy: understanding state anti-eviction policies during COVID-19. *Policy and Society, 41*(2), 231–246.

Neil-Sztramko, S.E., Belita, E., Traynor, R.L., Clark, E., Hagerman, L., & Dobbins, M. (2021). Methods to support evidence-informed decision-making in the midst of COVID-19: creation and evolution of a rapid review service from the National Collaborating Centre for Methods and Tools. *BMC Medical Research Methodology 21*(231).

Pereira, A.M.M., Machado, C.V., Veny, M.B., Juan, A.M.Y., & Recio, S.N. (2021). Governance and state capacities against COVID-19 in Germany and Spain: national responses and health systems from a comparative perspective. Ciencia & saude coletiva, 26(10), 4425–4437.

Public Health Agency of Canada. (2021). FIGURE 10: Continuum of Interventions to Address the Determinants of Health [Infographic]. Government of Canada.

Public Health Agency of Canada. (2022). FIGURE 7: Upstream to Downstream: A Continuum of Climate-Health Action [Infographic]. Government of Canada.

Selembo, T.D., Talbot, E.A., Courtine, C.T., Daly, E.R., Hull, T.W., & Durzy, K.J. (2022). Ensuring Equitable COVID-19 Vaccine Allocation in New Hampshire: The First Eight Months toward a New Era. *Vaccines, 10*(9), 1421.

Schmidt, E., Schalk, J., Ridder, M., van der Pas, S., Groeneveld, S., & Bussemaker, J. (2022). Collaboration to combat COVID-19: policy responses and best practices in local integrated care settings. Journal of health organization and management.

Villalobos Dintrans, P., Browne, J., & Madero-Cabib, I. (2021). It Is Not Just Mortality: A Call From Chile for Comprehensive COVID-19 Policy Responses Among Older People. *The journals of gerontology, 76*(7), e275–e280.

World Health Organization. (2023). Health promotion.

World Health Organization. (2022, November 28). WHO recommends new name for Monkeypox disease.

Young, H.M., Quinn, W., Brassard, A., Gualtieri, C., & Reinhard, S. (2020). COVID-19 Pandemic Spurs Policy Changes Benefiting Older Adults. *Journal of gerontological nursing, 46*(6), 19–23.