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GIG CYMRU NHS WALES
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Placing health equity at the heart of the COVID-19 sustainable response and recovery: Building prosperous lives for all in Wales

Technical Supplement

The Welsh Health Equity Status Report initiative (WHESRi)

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1. Introduction

This is a technical (methodological) supplement to the first report developed as part of the Welsh Health Equity Status Report initiative (WHESRi), 'Placing health equity at the heart of the COVID-19 sustainable response and recovery: Building prosperous lives for all in Wales'[1] (referred to hereafter as 'the WHESRi Report').

The WHESRi Report applies an innovative World Health Organization (WHO) health equity framework (Box 1)[2] to map the wider social, economic and environmental impacts of the Coronavirus (COVID-19) pandemic in Wales, providing a multidimensional picture of the implications on health equity and vulnerability. This includes national and international evidence and intelligence, public perceptions and experience, administrative data, health economics modelling, as well as policy responses and mitigation measures.

This document details the data sources, methods of analysis, and indicators used throughout the WHESRi Report, and captures any limitations, caveats, assumptions and notes for interpretation, as well as a link to the original data source, if available.

Box 1. Five essential conditions for healthy prosperous lives for all - WHO HESRi framework showing the different types of policies across sectors to address the wider determinants of health (1)

1. Health and health services

Policies that aim to ensure availability, accessibility, affordability and quality of preventative and health care services and interventions.

For example, health protection, health promotion and improvement, primary, secondary and scheduled care.

2. Health and income security and social protection

Policies that aim to provide economic security and support to reduce the health and social consequences of poverty and low income throughout a person's life.

For example, financial support for parents, older people or unemployed.

3. Health and living conditions

Policies that aim to ensure opportunities for, and access and exposure to living conditions and environments that have a positive influence on people's health and well-being.

For example, planning, good quality and secure housing, clean air, green spaces.

4. Health and social and human capital

Policies that aim to develop and strengthen social relations and community assets, including education, skills, community resources and meaningful social interactions to promote learning, and protect and promote health and well-being throughout a person's life.

For example, improving training, apprenticeship, building community cohesion and resilience, trust, sense of belonging.

5. Health and employment and working conditions

Policies that aim to improve the health impact of employment, working conditions and workplace equality.

For example, availability of work, a living wage, physical and mental demands, ensuring health and safety at work.

1 https://phwwhocc.co.uk/resources/welsh-health-equity-status-report-whesri/
2 https://www.euro.who.int/en/health-topics/health-determinants/social-determinants/health-equity-status-report-initiative

2. Overview of methodological approach

The WHESRi Report uses multiple sources and methods to assess, analyse and synthesise the data, evidence and policies (Box 2).

Box 2: Overview of methodological approach used in the WHESRi Report

Systematic assessment and analysis of documents, including:

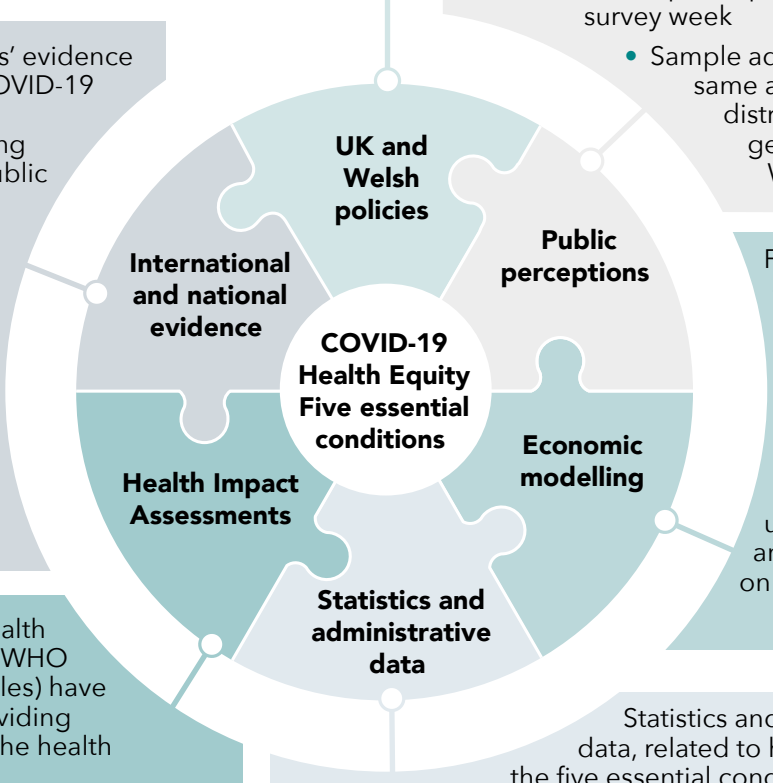
- UK and Welsh Government policies, strategies and interventions
- Published in response to the COVID-19 pandemic, from March to November 2020
- Relevant to health equity and/or the five essential conditions, and mapped across

The policy analysis is complemented with information and evidence from government and non-governmental agencies, think tanks and research.

Public perceptions of COVID-19 and its measures have been analysed, using data from the COVID-19 National Public Engagement Survey (WHO CC, Public Health Wales):

- Gathered over the first 16 weeks (3 April-2 July 2020)
- Including Welsh residents 18+ years old
- Exploring views/attitudes/experiences, aligning to the five essential conditions
- Showing differences according to sex, age group and level of deprivation
- Estimates generated from a generalized linear model including age, sex, Welsh Index of Multiple Deprivation quintile and survey week
- Sample adjusted to have the same age/sex/ deprivation distribution as the general population in Wales

Global, UK and Wales' evidence and data from the COVID-19 International Horizon Scanning and Learning reports (WHO CC, Public Health Wales) have been summarised, synthesised and mapped across the five essential conditions. It was also used to provide contextual information on health equity and COVID-19.



Forecasts of the economic consequences of COVID-19 pandemic on longstanding illness (LSI) and chronic conditions have been modelled, using unemployment and prevalence data on LSI in Wales.

Findings from two health impact assessments (WHO CC, Public Health Wales) have been integrated, providing additional insight in the health equity impacts:

- A Health Impact Assessment of the 'Staying at Home and Social Distancing Policy' in Wales
- A COVID-19 pandemic world and beyond: The health impact of home and agile working in Wales

Statistics and administrative data, related to health equity and the five essential conditions, published February-December 2020, have been analysed.

For example:

- Hospital admissions, extracted from the Public Health Wales Observatory COVID-19 Recovery Profile
- Coronavirus Job Retention Scheme, extracted from HM Revenue & Customs, UK Government
- Reported crimes, extracted from DATA.POLICE.UK
- Others

3. Using the Welsh Index of Multiple Deprivation

The 2019 Welsh Index of Multiple Deprivation (WIMD) has been used throughout this report**.**

The Welsh Index of Multiple Deprivation is the official measure of relative deprivation for small areas; it is based at the Lower Super Output Area (LSOA) level. Further information on statistical geographies can be found on the Office for National Statistics (ONS) website[3]. The index is constructed using 8 different domains and they are weighted as follows:

- Income (22%)
- Employment (22%)
- Health (15%)
- Education (14%)
- Access to Services (10%)
- Housing (7%)
- Community Safety (5%)
- Physical Environment (5%)

Given that the Welsh Index of Multiple Deprivation is an area based measure, it is important to bear in mind that not all residents from an area that has been categorised as deprived are necessarily deprived.

Further information on the index can be found on the Welsh Government website[4].

3 https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography#output-area-oa
4 https://gov.wales/welsh-index-multiple-deprivation-full-index-update-ranks-2019

4. Data analysis: public perceptions, statistics and administrative data

4.1 Public perceptions: Public Health Wales' Public Engagement Survey on Health and Well-being during COVID-19 Measures (Public Engagement Survey)[5]

In response to the COVID-19 pandemic outbreak, Public Health Wales has been at the forefront, undertaking a number of actions to protect and improve population health and well-being. A key element of the response has been to listen to the Welsh public and understand their perceptions, experiences and attitudes towards the pandemic, as well as towards the response measures, such as lockdowns and isolation. This has been implemented through a **Public Engagement Survey (the Survey)**, established in early April 2020 and continuing to date.

This national telephone Survey conducts interviews with approximately 600 adults (aged 18 years or over) each week, to understand how COVID-19 and the response measures are affecting the physical, mental and social well-being of people in Wales.

The Survey includes a set of 'core' questions repeated each week, as well as additional time-limited questions altered depending on emergent issues at the time of interview, for example, support for relevant intervention measures. The responses available to each question are outlined in Table 1. The overall sample size and characteristics of the samples are available in Tables 2 and 3. A breakdown of when each question was asked is provided in Table 4. Generally, the longer the duration for which a question was asked in the survey, the larger the sample size.

For the purpose of the WHESRi Report, data analysis was conducted on the sample interviewed during the first wave of the pandemic, covering the period 03 April 2020 to 25 July 2020 (Survey weeks 1 to 16).

The following sections detail the processes and methods involved in the analysis of the Survey data. These include –

- Mapping of the Survey variables to the five essential conditions (Figure 1)
- Catalogue of relevant variables (Table 1)
- Characteristics of Survey respondents (Table 2 and 3)
- Inclusion of Survey questions week to week (Table 4)
- Weighting of the Survey questions
- Generation of estimated marginal means
- Limitations

A description of the outputs (Figures and Tables) from the Survey data included within the WHESRi Report are detailed in Annex A of this document.

5 https://phw.nhs.wales/news/public-health-wales-public-engagement-survey/

Figure 1: Flow chart of analysis process and steps mapping the Survey variables to the five essential conditions

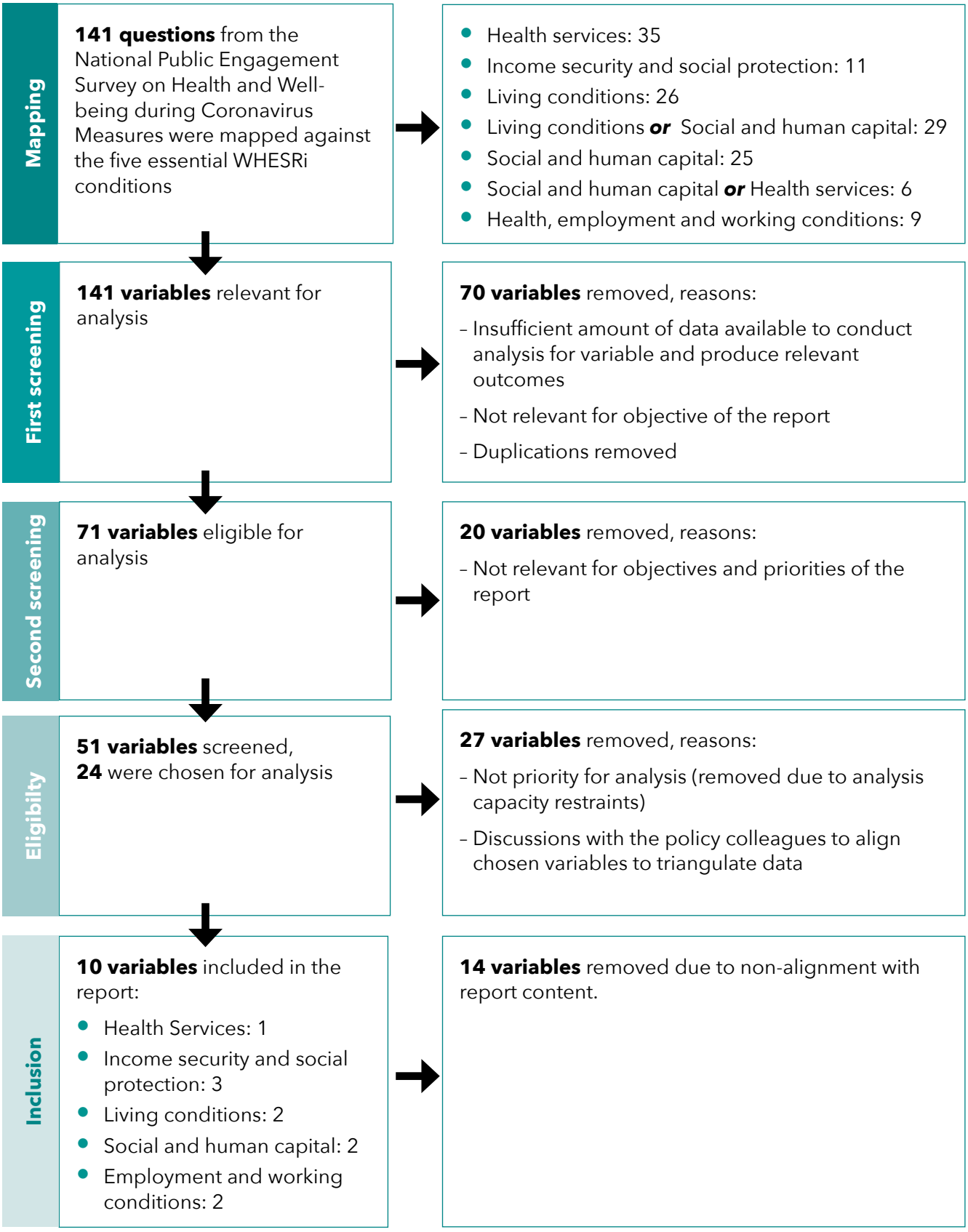


Table 1: Variable catalogue, variables selected from the Survey following mapping to the five essential conditions, 03 April to 25 July 2020. Further details of each variable can be found in Annex A of this document.

Essential Condition	Variable label	Survey question	Value	Value label
Health services	Medical appointment	If I was invited to attend a routine medical appointment, I would feel safe to do so	1	Agree
			2	Disagree
			3	Undecided
			.	Missing
Income security & social protection	Worry about employment status	Over the past week, how much have the following issues been worrying you? Losing your job or not being able to find one	1	Not at all
			2	A little
			3	A lot
			4	Not applicable
			.	Missing
	Furloughed	Has anyone in your household: Been suspended from work on lower or no pay (e.g. furloughed)?	0	No
			1	Yes
	Worse financial situation	As a result of coronavirus restrictions, would you say your current financial situation is worse, about the same or better than normal?	1	Worse
			2	The same
			3	Better
			.	Missing
Living conditions	Left home in the last 7 days	In the last 7 days, how many days have you left your home or garden?	0	0 days
			1	1 day
			2	2 days
			3	3 days
			4	4 days
			5	5 days
			6	6 days
			7	7 days
			.	Missing
	Good relations with household	At the moment, how would you say relationships between members of your household are?	1	Very good
			2	Good
			3	Okay
			4	Bad
			5	Very bad
			6	Not applicable
			.	Missing

Social & human capital	Main source of information	Which of these would you say was your main source of information? NHS, Government, Public Health Wales, News outlets, Social media or Family, friends and colleagues.	1	NHS
			2	Government
			3	Public Health Wales
			4	News outlets
			5	Social media
			6	Family, friends and colleagues
			7	Other
			.	Missing
	Left home to volunteer	On how many days have you left your home to volunteer or support members of your local community?	0	0 days
			1	1 day
			2	2 days
			3	3 days
			4	4 days
			5	5 days
			6	6 days
			7	7 days
			.	Missing
Employment and working conditions	Key worker role	Are you currently fulfilling any of the government's key worker roles?	1	No
			2	Health, social care of relevant related support worker
			3	Teacher or childcare worker
			4	Transport worker
			5	Food chain worker
			6	Key public services worker
			7	Local or national government worker
			8	Utilities, communications and financial services
			9	Medicines or protective equipment
			.	Missing
	Worry about work	Over the past week, how much have the following issues been worrying you? Work, even if you feel your job is secure	1	Not at all
			2	A little
			3	A lot
			4	Not applicable
			.	Missing

Table 2: Survey participants by variable, sex and age group (years), 03 April to 25 July 2020

Essential condition	Variable	Sex	Age group (years)														Total	
			18-24		25-34		35-44		45-54		55-64		65-74		75+			
			n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Health services	Medical appointment	Male	35	(3.8)	71	(7.7)	85	(9.2)	152	(16.4)	190	(20.5)	286	(30.9)	106	(11.5)	925	(100)
		Female	67	(4.3)	148	(9.4)	170	(10.8)	306	(19.5)	370	(23.6)	360	(22.9)	148	(9.4)	1,569	(100)
Income security & social protection	Worry about employment status	Male	132	(4.5)	233	(8.0)	258	(8.9)	435	(15.0)	588	(20.2)	889	(30.6)	374	(12.9)	2,909	(100)
		Female	226	(4.8)	462	(9.7)	556	(11.7)	751	(15.8)	1,064	(22.4)	1,228	(25.9)	455	(9.6)	4,742	(100)
	Furloughed	Male	132	(4.5)	233	(8.0)	259	(8.9)	435	(14.9)	589	(20.2)	889	(30.5)	374	(12.8)	2,911	(100)
		Female	227	(4.8)	462	(9.7)	558	(11.8)	751	(15.8)	1,065	(22.4)	1,229	(25.9)	455	(9.6)	4,747	(100)
	Worse financial situation	Male	35	(3.8)	71	(7.7)	85	(9.2)	152	(16.4)	189	(20.4)	286	(30.9)	107	(11.6)	925	(100)
		Female	67	(4.3)	148	(9.4)	170	(10.8)	306	(19.5)	370	(23.6)	362	(23.0)	148	(9.4)	1,571	(100)
Living conditions	Left home in the last 7 days	Male	56	(3.4)	128	(7.7)	156	(9.4)	261	(15.7)	344	(20.7)	517	(31.2)	196	(11.8)	1,658	(100)
		Female	125	(4.5)	269	(9.7)	305	(11.0)	476	(17.1)	624	(22.5)	712	(25.6)	268	(9.6)	2,779	(100)
	Good relations with household	Male	67	(7.8)	85	(9.9)	76	(8.8)	120	(13.9)	171	(19.8)	229	(26.6)	114	(13.2)	862	(100)
		Female	76	(5.5)	147	(10.7)	211	(15.3)	214	(15.5)	316	(22.9)	315	(22.8)	101	(7.3)	1,380	(100)
Social & human capital	Main source of information	Male	68	(6.6)	89	(8.7)	80	(7.8)	139	(13.6)	204	(19.9)	300	(29.3)	145	(14.1)	1,025	(100)
		Female	82	(5.0)	156	(9.6)	219	(13.5)	227	(14.0)	364	(22.4)	429	(26.4)	150	(9.2)	1,627	(100)
	Left home to volunteer	Male	76	(6.1)	105	(8.4)	103	(8.3)	173	(13.9)	243	(19.5)	371	(29.7)	177	(14.2)	1,248	(100)
		Female	102	(5.2)	193	(9.8)	251	(12.8)	273	(13.9)	440	(22.4)	515	(26.3)	187	(9.5)	1,961	(100)
Employment & working conditions	Key worker role	Male	127	(4.7)	191	(7.1)	228	(8.5)	385	(14.4)	512	(19.2)	849	(31.9)	364	(13.7)	2,656	(100)
		Female	204	(4.6)	405	(9.2)	496	(11.2)	666	(15.3)	931	(21.3)	1,205	(27.6)	449	(10.3)	4,356	(100)
	Worry about work	Male	132	(4.5)	232	(8.0)	259	(8.9)	433	(14.9)	588	(20.2)	888	(30.6)	373	(12.8)	2,905	(100)
		Female	226	(4.8)	462	(9.7)	556	(11.7)	750	(15.8)	1,064	(22.4)	1,228	(25.9)	455	(9.6)	4,741	(100)

Source: Public Engagement Survey, Public Health Wales

Table 3: Survey participants by variable, sex and deprivation quintile, 03 April to 25 July 2020

Essential condition	Variable	Sex	Welsh Index of Multiple Deprivation (2019)											
			Most deprived (1)		2		Middle (3)		4		Least deprived (5)		Total	
			n	%	n	%	n	%	n	%	n	%	n	%
Health services	Medical appointment	Male	189	(20.4)	177	(19.1)	177	(19.1)	205	(22.2)	177	(19.1)	925	(100)
		Female	269	(17.1)	324	(20.7)	328	(20.9)	308	(19.6)	340	(21.7)	1,569	(100)
Income security & social protection	Worry about employment status	Male	532	(18.3)	539	(18.5)	546	(18.8)	674	(23.2)	616	(21.2)	2,907	(100)
		Female	807	(17.0)	939	(19.8)	974	(20.6)	982	(20.7)	1,036	(21.9)	4,738	(100)
	Furloughed	Male	532	(18.3)	540	(18.6)	547	(18.8)	674	(23.2)	616	(21.2)	2,909	(100)
		Female	808	(17.0)	940	(19.8)	974	(20.5)	983	(20.7)	1,038	(21.9)	4,743	(100)
	Worse financial situation	Male	189	(20.4)	177	(19.1)	176	(19.0)	206	(22.3)	177	(19.1)	925	(100)
		Female	270	(17.2)	324	(20.6)	329	(20.9)	308	(19.6)	340	(21.6)	1,571	(100)
Living conditions	Left home in the last 7 days	Male	321	(19.4)	303	(18.3)	300	(18.1)	391	(23.6)	342	(20.6)	1,657	(100)
		Female	491	(17.7)	542	(19.5)	574	(20.7)	562	(20.2)	608	(21.9)	2,777	(100)
	Good relations with household	Male	133	(15.4)	159	(18.5)	175	(20.3)	207	(24.0)	187	(21.7)	861	(100)
		Female	227	(16.5)	263	(19.1)	268	(19.4)	290	(21.0)	330	(23.9)	1,378	(100)
Social & human capital	Main source of information	Male	172	(16.8)	191	(18.7)	206	(20.1)	241	(23.5)	214	(20.9)	1,024	(100)
		Female	274	(16.9)	321	(19.8)	320	(19.7)	347	(21.4)	363	(22.3)	1,625	(100)
	Left home to volunteer	Male	340	(17.3)	360	(18.4)	366	(18.7)	459	(23.4)	436	(22.2)	1,961	(100)
		Female	531	(17.0)	611	(19.6)	629	(20.1)	665	(21.3)	688	(22.0)	3,124	(100)
Employment & working conditions	Key worker role	Male	495	(18.6)	500	(18.8)	497	(18.7)	612	(23)	552	(20.7)	2,656	(100)
		Female	760	(12.5)	873	(18.5)	881	(19.9)	903	(22.7)	939	(26.4)	4,356	(100)
	Worry about work	Male	529	(18.2)	538	(18.5)	546	(18.8)	674	(23.2)	616	(21.2)	2,903	(100)
		Female	807	(17.0)	939	(19.8)	974	(20.6)	981	(20.7)	1,036	(21.9)	4,737	(100)

Source: Public Engagement Survey, Public Health Wales

Table 4: Survey questions, by week, 03 April to 25 July 2020

Essential Conditions	Variable label	Survey question	Week															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			03 - 11 April	14 - 18 April	20 - 25 April	27 April - 02 May	04-09 May	11 - 16 May	18 - 22 May	25 - 29 May	1 - 5 June	08 - 12 June	15 - 20 June	22 - 27 June	29 June - 03 July	06 - 11 July	13 - 17 July	20 - 25 July
Health services	Medical appointment	If I was invited to attend a routine medical appointment, I would feel safe to do so											✔	✔	✔	✔	✔	✔
Income security & social protection	Worry about employment status	Over the past week, how much have the following issues been worrying you? Losing your job or not being able to find one	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Furloughed	Has anyone in your household: Been suspended from work on lower or no pay (e.g. furloughed)?	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Worse financial situation	As a result of coronavirus restrictions, would you say your current financial situation is worse, about the same or better than normal?											✔	✔	✔	✔	✔	✔
Living conditions	Left home in the last 7 days	In the last 7 days, how many days have you left your home or garden?							✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Good relations with household	At the moment, how would you say relationships between members of your household are?	✔	✔	✔	✔	✔											
Social & human capital	Main source of information	Which of these would you say was your main source of information? NHS, Government, Public Health Wales, News outlets, Social media or Family, friends and colleagues.	✔	✔	✔	✔	✔											
	Left home to volunteer	On how many days have you left your home to volunteer or support members of your local community?	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔						
Employment & Working Conditions	Key worker role	Are you currently fulfilling any of the governments' key worker roles?	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Worry about work	Over the past week, how much have the following issues been worrying you? Work, even if you feel your job is secure	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Source: Public Engagement Survey, Public Health Wales

Weighting the Survey

The Survey sample has been weighted according to deprivation quintile (using WIMD 2019), age group and sex. The weighting was calculated by comparing the population groups in the Survey sample to the same population group in the 2019 mid-year population estimate, supplied by the ONS[6]. This allowed a weighting field to be created, allowing estimates to be generated that were representative of the Welsh population when taking into account the above-mentioned factors.

Generating estimated marginal means using a Generalized Linear Model

Generalized Linear Models (GLM) with a 'binomial' distribution family and a 'logit' link function were used to analyse the Survey data, and the 'margins' command (a command used to calculate predictions of a previously fit model at fixed values of specified covariates) was used to calculate the predicted probability of response variable for each variable of interest. GLM is the extension of a linear modelling framework to variables that are not normally distributed. GLMs are the most commonly used statistical method to model binary variables or count data[7]. Variables were re-coded into binary variables (with a value of either 0 or 1). Estimated marginal means were produced by adjusting for Survey week, age, sex and level of WIMD area-based deprivation. Survey data has been weighted by the population parameter, and estimates have been provided with 95% confidence intervals.

GLM Equation

$$g(\mu_i) = \alpha + \beta_1.\text{SurveyWeek}_i + \beta_2.\text{Age}_i + \beta_3.\text{Sex}_i + \beta_4.\text{WIMDQuintile}_i$$

Where, g represents the use of GLM, μ = response variable (y), i = individual, α = constant (intercept), β= coefficient

Complete case analyses were run; meaning Survey participants with missing data for the variable of interest were excluded (and are excluded from total sample in Tables 2 and 3). Statistical analysis was conducted using STATA 14 and SPSS 22.

Limitations

The Survey is based on self-reported data and as such is susceptible to 'respondent bias'. Examples of such bias include the ability to correctly recall certain information (for example - on how many days someone had left their home or garden) or in providing information that is perceived to be more socially acceptable (for example – responding truthfully as to whether they had breached social distancing regulations).

The Survey has been conducted during a highly dynamic time where policy changes had a severe impact on individuals, and so responses to questions could be influenced by recent political or other developments/announcements. When interpreting outputs it is important to consider the timeline of events or regulations, published by Welsh Government or other institutions[8].

4.2 Statistics and administrative data

Statistical and administrative data, related to health inequities and the five essential conditions, published between February and December 2020 was sourced for inclusion in the WHESRi Report.

Health and health services

Data relating to the use of hospital services such as elective/emergency hospital admission were extracted from the Public Health Wales Observatory COVID-19 Recovery Profile[9].

6 https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland
7 https://www.sagepub.com/sites/default/files/upm-binaries/21121_Chapter_15.pdf
8 https://research.senedd.wales/research-articles/coronavirus-timeline-welsh-and-uk-governments-response/
9 https://publichealthwales.shinyapps.io/COVID19_Recovery_Profile_PHWO/

Health and income security & social protection

Data from the Coronavirus Job Retention Scheme (CJRS) was retrieved from the HM Revenue & Customs (HMRC), UK Government website. The CJRS was launched on 20 April 2020. CJRS official statistics are monthly experimental statistics that provide estimates of the number and value of claims made to the CJRS to HMRC.

The data of interest for the WHESRi Report was extracted from the claims received in Wales up to 31 July 2020. Data was broken down into eligible employments for furlough and the actual employments furloughed, and split by sector.

Health and living conditions

'Street crime' data was retrieved for the four police forces that cover Wales (Dyfed-Powys, Gwent, North Wales and South Wales Police) for March to September 2020, corresponding with the 'first wave' of the COVID-19 pandemic in Wales, and the same period in 2019 for comparison.

Street crime data is reported at the LSOA level in which the reported crime took place. For the purpose of this analysis, all LSOAs were assigned to their corresponding WIMD (2019) quintile (1- Most deprived, 5- Least deprived).

Police and crime data is included when constructing the WIMD, and plays a role in the configuring of LSOAs to a WIMD quintile. Therefore, police and crime data is represented on both sides of the equation in this analysis. However, police and crime data is responsible for a maximum of 5% of the total weighted data that influence the assignment of LSOAs to WIMD quintiles, and only 4% of that total is accounted for within this analysis. Subsequently, while police and crime data is present on both sides of the equation in this analysis, it is a relatively minor factor influencing the assignment of WIMD quintiles, and so the analysis conducted in the WHESRi Report still provides useful findings.

Breaches of COVID-19 pandemic regulations are recorded within 'Anti-Social Behaviour Crimes', while 'Violent crime' includes Possession of weapon, Violence and sexual offences and Public order. It does not include Arson and Criminal damage or Theft and Burglary.

Health and social and human capital

Data relating to the equity impact of COVID-19 on educational outcomes was sourced from an impact analysis conducted by Qualifications Wales[10].

Health and employment and working conditions

Statistics on the percentage of workforce reporting that they could not socially distance whilst at work was obtained from the Annual Population Survey (APS), January to December 2019, and provided by the ONS[11]. Please note that the APS is a UK wide survey, and Wales only data for physical proximity in the workplace was not available at the time of publication. The physical proximity measure is defined as follows:

0 – I do not work near other people (beyond 100 ft.)

25 – I work with others but not closely (for example, private office)

50 – Slightly close (for example, shared office)

75 – Moderately close (at arm's length)

100 – Very close (near touching)

Industries with a significant proportion of workforce within the 75-100 category (in this case >10%) were focused on in the report. **A description of the outputs (Figures and Tables) using the statistical and administrative data included within the WHESRi Report is detailed in Annex A of this document.**

10 https://www.qualificationswales.org/english/publications/summer-2020-equalities-impact-analysis-gcse-as-and-a-level/
11 www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/adhocs/11838industrybyphysicalproximitytoothersintheuk2019

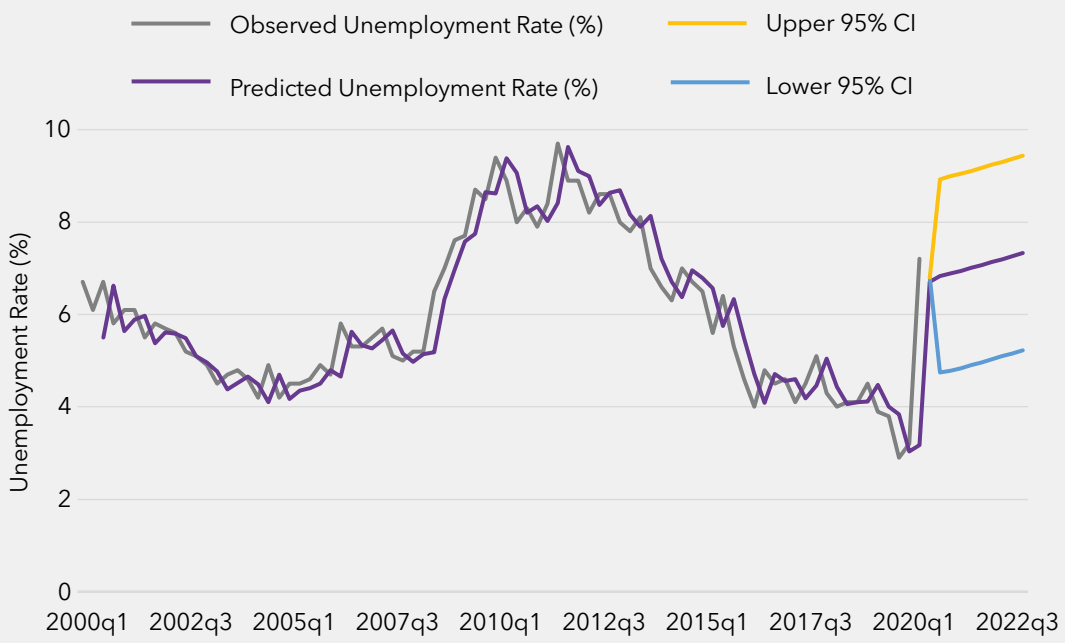
5. Health economics modelling

As part of the COVID-19 pandemic response, Public Health Wales has initiated a health economics modelling series to assess and forecast the economic impact of COVID-19 on population health status (morbidity/mortality) and health service use in Wales.

The WHESRi Report uses the results from the first report of this modelling series, focusing on the impact of rising unemployment on longstanding illness (LSI) and chronic conditions[12]. The aim of this study was to forecast the economic consequences of COVID-19 pandemic on LSI. Historical time series data from quarter 1 of 2000 to quarter 1 of 2020 from the Labour Force Survey and quarter 2 of 2020 data from the Bank of England' estimated unemployment rates were collated. In addition, data for longstanding illnesses, including chronic health conditions were collated from the National Survey for Wales 2019. Forecast analysis was performed using autoregressive integrated moving average (ARIMA) model. ARIMA is used for time series data to get a better understanding of the data and predict future values. Data required for the risk of LSI, including disease specific risk, was taken from the scientific literature[12]. Estimation of the percentage of adults with LSI, including disease specific rates, was done by taking into account the change in projected unemployment rates and risk probability for LSI.

The summary results of the study are presented in the outputs below (Figures 2, 3 and 4).

Figure 2. Projected unemployment rates in Wales following COVID-19, 2020-2022



12 https://phw.nhs.wales/publications/publications1/economic-consequences-of-covid-19-pandemic-outbreak-on-health-indicators-and-health-service-use-in-wales-longstanding-illness-projection-2020-21-2022-23/

Figure 3: Projected percentage of adults with longstanding illnesses

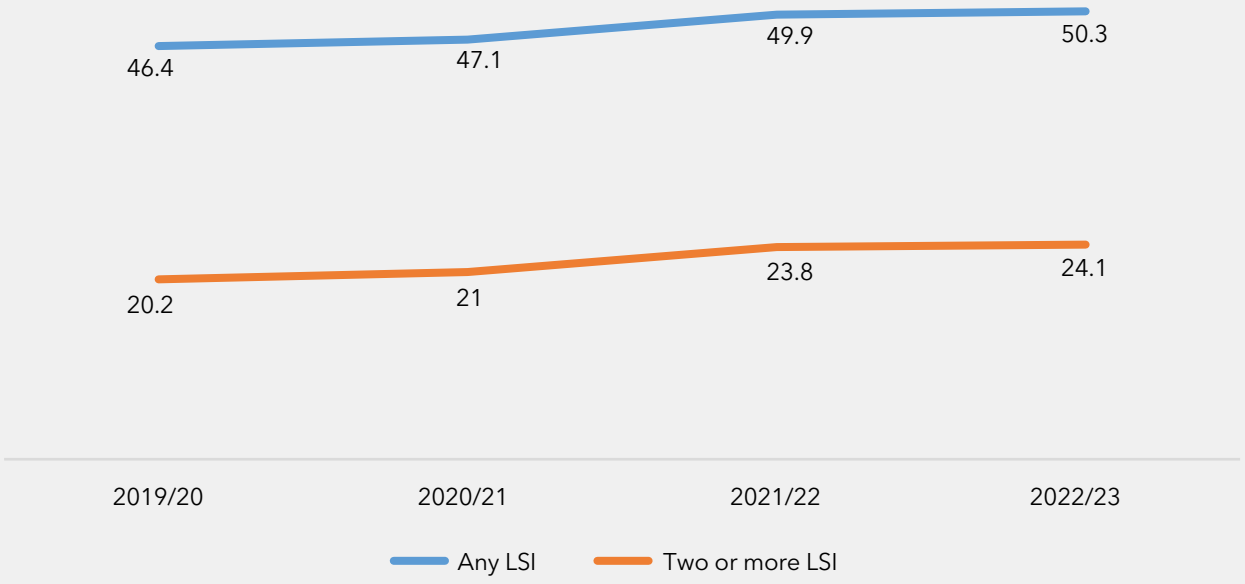
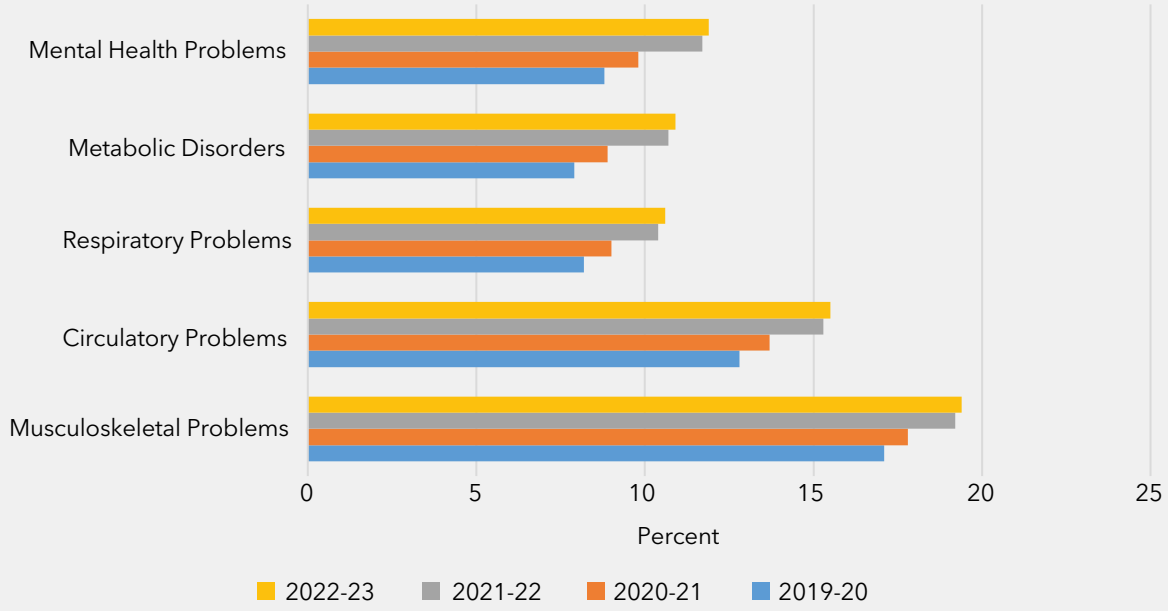


Figure 4: Projected percentage of adults with chronic health conditions



6. Policy analysis: UK and Welsh policies

The policy analysis within the WHESRi Report has focused on providing a systematic assessment of documents published by government agencies in Wales and the UK that set the course of activity in response to the COVID-19 outbreak from March to November 2020 in Wales. This complemented with data and analysis from scientific journals, Non-Governmental Organisations, think tanks and international Government bodies (e.g. World Health Organization, Organisation for Economic Co-operation and Development).

Approach

Since April 2020, daily desktop exercises have been used to identify overarching policies and guidance documents adopted in direct response to the COVID-19 outbreak.

Welsh Government colleagues took an active role to ensure the documents collated were representative of the policy context in their area of expertise and provided the foundation of a more extensive policy analysis as part of the broader scope of the work.

The documents were assessed on the basis of their relevance for Wales and potential effect on one of the five essential conditions. Some documents were allocated to multiple essential conditions due to their overlapping relevance. After allocating the documents according to essential condition, the most relevant documents were included in the policy tables within the WHESRi Report. Key policies or guidance documents have been described in more detail into the policy narratives for each essential conditions and/or in one of the five overarching cases studies and combined with national and international data findings.

Limitations

The publications were, in general, part of a wider policy context, although the scope of the report was to focus on documents published since the first wave of the outbreak. In addition, due to the rapid nature of the analysis, some documents may have been omitted and it should be used as a guide only.

Comparison of national and international COVID-19 response and recovery plans with an equity lens

International experience shows it is possible to mitigate health and economic shocks through timely policy action with a focus on identifying and supporting the people most in need: shocks do not affect everyone equally. In all decision-making aspects of the transition phase, special attention must be given to those individuals and population groups who are most vulnerable and most likely to be left behind in these challenging times.

While the health system response is critical, important public policy levers lie outside the health sector, in the hands of those responsible for fiscal policy and social protection. Countries with weaker social protection systems struggle more with responses to health and economic shocks. Building more resilient health and social systems requires sustained increase in public funding for both.

The Welsh response to the COVID-19 outbreak has not been done in isolation. In order to assess the alignment of the response to health equity and socio-economic impact measures, a comparative table has been developed (Annex B). Policy covered in this section briefly includes:

1. **Welsh Government COVID-19 Reconstruction: Challenges and Priorities**
2. **Our plan to rebuild: The UK Government's COVID-19 recovery strategy**
3. **United Nations (UN) A UN framework for the immediate socio-economic response to COVID-19**
4. **Organisation for Economic Co-operation and Development (OECD) COVID-19: Protecting people and societies**

7. National and International Evidence: International Horizon Scanning

The International Horizon Scanning and Learning work stream was initiated by Public Health Wales to inform the evolving COVID-19 public health response and recovery plans in Wales. It focuses on COVID-19 international evidence, experience, measures as well as transition and recovery approaches in order to understand and explore solutions for addressing the on-going and emerging health, wellbeing, social and economic impacts (potential harms and benefits).

This work is aligned with and feeds into the Welsh Government Office for Science and into Public Health Wales' Gold Command. It has been part of a wider Public Health Wales systematic approach to intelligence gathering to inform comprehensive, coherent, inclusive and evidence-informed policy action, which supports the Wellbeing of Future Generations (Wales) Act[13] and the Prosperity for All national strategy[14] towards a healthier, more equal, resilient, prosperous and globally responsible Wales.

The International Horizon Scanning reports have, and continue to facilitate timely learning from the experience of other countries and the emerging evidence and guidance provided by key national and international organisations, which has been critical to inform actions and approaches in Wales. It is important to note that the reports vary in focus and scope, depending on the evolving COVID-19 situation, public health and policy needs and the available evidence.

Method

To gain an understanding and overview of the current available national and international evidence in regards to COVID-19, the International Horizon Scanning includes a variety of data sources including scientific literature, government communications and non-governmental organisations' reports and analysis. The methodological approach involves a three step process consisting of a scoping review, evidence synthesis and final edit. This systematic approach aims to provide dynamic up-to-date actionable intelligence and communicate key findings, allowing for the report to be concise and easily-understandable.

Scoping reviews historically claim to assess 'what works' when tackling health inequalities[15]. The inclusion criteria for each scoping review includes, working with identified evidence which addresses the COVID-19 pandemic, in addition to reliable and robust resources, including the Centre for Disease Control and Prevention (CDC), the WHO, the European Centres for Disease Prevention and Control (ECDC), ONS, OECD, The World Bank Data Catalogue, along with robust clinical and academic peer-reviewed journal articles. The hierarchy of evidence is used to assess how robust research studies are.

Global, UK and Wales evidence and data from the COVID-19 International Horizon Scanning and Learning reports (WHO CC, Public Health Wales[16]) have been summarised, synthesised and mapped across the five essential conditions identified in the Health Equity Status Report initiative (HESRi)[17]. It was also used to provide contextual information on health equity and COVID-19 for the report. Eligibility criteria for this mapping exercise include that the evidence specifically addresses the wider impacts and health equity areas influenced by the COVID-19 pandemic; and could be mapped against at least one of the five essential conditions.

13 https://www.futuregenerations.wales/about-us/future-generations-act/
14 https://gov.wales/prosperity-all-national-strategy
15 https://pubmed.ncbi.nlm.nih.gov/18634627/
16 https://phw.nhs.wales/publications/
17 https://www.euro.who.int/en/health-topics/health-determinants/social-determinants/health-equity-status-report-initiative

8. Health Impact Assessments (HIAs)

In 2020/21, the Wales Health Impact Assessment Support Unit (WHIASU), Policy and International Health, WHO Collaborating Centre on 'Investment in Health and Well-being', Public Health Wales carried out a series of Health Impact Assessments (HIAs) in relation to the COVID-19 pandemic. These focussed on the impact of the 'Staying at Home and Social Distancing Policy'[18] in Wales (otherwise informally known as 'lockdown') and the impacts of 'Home and Agile Working'[19]. Information and evidence from these HIAs and their reports have been utilised in the report.

The European Centre for Health Policy[20] Gothenburg Consensus is widely accepted as the seminal definition of Health Impact Assessment, and defines it as:

> *'A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.'*

HIA is a process which supports organisations to assess the potential consequences of their decisions on people's health and well-being and how these will impacts will be distributed across the population.

As practised in Wales, HIA is based on the World Health Organization (WHO) definition of health and well-being (WHO, 1948)[21], which encompasses physical, mental and social health and well-being. HIA in Wales views population impact through the lens and framework of the social determinants of health. This framework considers not just the biophysical and environmental health impacts which can be derived from policies, but also assesses the social factors that can have an impact and the population groups which are affected. These factors, such as environment, housing, access to services and employment can all interact to influence health and well-being. The Public Health (Wales) Act 2017 has legislated for HIA to become statutory for public bodies in specific circumstances (as yet undefined). The HIA followed the methodology as prescribed in the Welsh HIA Guidance[22].

HIA provides an evidence-based systematic yet flexible and practical framework that can be used to consider the impact of local and national policies, plans or proposals and how they potentially (or where observed actually) affect population health, well-being and inequalities positively or negatively. It can also identify opportunities to maximise health and mitigate for any negative or unintended negative impacts through the provision of recommendations or suggested action. A major objective or purpose of a HIA is to inform and influence decision-making or policy; however, it is not a decision- making tool per se. The process comprises of 5 steps as depicted in Box 3.

Box 3: The HIA Process

Screening: does the proposal or plan have an impact on population health?

Scoping: what resources, timeframes, policy windows and evidence needs to be considered? Does a Steering Group need to be established? Roles and responsibilities of any Steering Group outlined.

Appraisal/Assessment of evidence: triangulation of qualitative and quantitative evidence and health intelligence.

Reporting and recommendations: construction of HIA report and any non-technical summary.

Review and reflection: including monitoring and evaluation – did the HIA and any findings have an impact on health and well-being or decision-making process?

18 https://phwwhocc.co.uk/resources/a-health-impact-assessment-of-the-staying-at-home-and-social-distancing-policy-in-wales-in-response-to-the-covid-19-pandemic/
19 https://phwwhocc.co.uk/resources/a-covid-19-pandemic-world-and-beyond-the-public-health-impact-of-home-and-agile-working-in-wales/
20 https://web.archive.org/web/20061007033923/http:/www.who.dk/document/PAE/Gothenburgpaper.pdf
21 https://www.who.int/about/who-we-are/constitution
22 https://phwwhocc.co.uk/resources/a-practical-guide-to-hia/

As part of the HIAs carried out, the following evidence was gathered or utilised:

- Literature reviews: To ensure that the HIAs were high quality in nature, research protocols were constructed with support from the Public Health Wales Evidence Service, to rapidly identify relevant published evidence.
- Qualitative evidence: The HIA captured knowledge and information held by stakeholder organisations and individuals in the HIAs. Notes from these were transcribed, verified by the participants and analysed by the team using thematic analysis.
- Health Intelligence and data: Community and demographic profiles of Wales were developed utilising recognised Welsh and UK sources such as the Public Health Wales Observatory
- A Public Health Wales Public Engagement Survey was also carried out as part of the WHO Collaborating Centre's wider COVID-19 response work. Findings from this survey (where relevant) have been used as a source of evidence for the HIAs.

This evidence was triangulated, analysed and weighted (peer reviewed journals and robust health intelligence, followed by grey literature and stakeholder contributions) when the assessment was carried out. The impacts were also characterised into duration, likelihood, direction and scale as depicted in Box 4.

Box 4: Characterisation of impact	
Impacts that are considered to be:	
Positive	Improve health status or provide an opportunity to do so.
Negative	Diminish health status.
Minimal	Of a minimum amount, quantity or degree, negligible.
Moderate	Average in intensity, quality or degree.
Major	Significant in intensity, quality or extent. Significant or important enough to be worthy of attention, noteworthy.
Short term	Impact seen in 0 – 1 year.
Medium term	Impact seen in 1 – 5 years.
Long term	Impact seen in over 5 years.
Possible	May or may not happen. Plausible, but with limited evidence to support.
Probable	More likely to happen than not. Direct evidence but from limited sources.

Annex A: Indicator metadata

The following section captures information about the outputs contained within the WHESRi Report. Please note, figure numbers within each table refer to the WHESRi Report itself, and not this technical supplement.

A1. Wales, health equity and COVID-19

Figure 2	
Name of indicator	Premature deaths from key non-communicable disease
Data source	Public Health Outcomes Framework, Public Health Wales
Time period	2016-2018
Who does it measure?	Persons, males and females aged 30-70
What does it measure?	Number of deaths with an underlying cause of death between International Classification of Diseases 10th Revision (ICD-10) ICD-10 code groups: • I00 – I99 Diseases of the circulatory system • C00 – C97 Malignant Neoplasms except C44 • E10 – E14 Diabetes mellitus • J30 – J99 Diseases of the respiratory system except infectious
Assumptions/caveats	European age-standardised rates per 100,000 population were calculated using the 2013 European standard population.
Data available at:	https://phw.nhs.wales/services-and-teams/observatory/data-and-analysis/public-health-outcomes-framework-2019/

Figure 3	
Name of indicator	Confirmed cases of COVID-19 by sex and deprivation fifth, European age-standardised rate per 100,000, Wales
Data source	Datastore database, Public Health Wales
Time period	23 February 2020 to 23 November 2020
Who does it measure?	All persons, all ages.
What does it measure?	Samples that have tested positive for COVID-19.
Assumptions/caveats	- Data includes results where the sample collection date is between 23 February and 23 November 2020. - Incidence calculated using ONS 2019 mid-year population estimates. - Incidence by deprivation quintile has been standardised to the 2013 European Standard Population. - Individuals may be tested more than once for SARS-CoV2. The number of confirmed cases is calculated using six-week episode periods, with people tested more than once in that period only being counted once. If any of their results are positive, that is the result which is presented. A new testing episode will occur where tests occur more than six weeks after the initial test. - Cases missing either age or sex were removed.
Data available at:	-

Figure 4	
Name of indicator	Deaths from all causes, age-standardised rate per 100,000, Wales, 2020 and 2015-2019 average, by deprivation and sex
Data source	Public Health Wales Observatory, using Public Health Mortality (PHM), Mid-year population estimates, ONS and WIMD.
Time period	06 March to 27 November, 5 year average (2015 to 2019) and 2020
Who does it measure?	All deaths in Welsh residents.
What does it measure?	All-cause mortality rate.
Assumptions/caveats	- Deaths are included for all causes. - Deaths counted based on usual area of residence. - Figure are based on the date the death was registered, not when it occurred. - Age standardised rates are based on the 2013 European Standard Population. 2020 rates are based on 2019 denominator data as a proxy. - 2020 data is provisional and is subject to change as more information is received.
Data available at:	https://publichealthwales.shinyapps.io/COVID19_Recovery_Profile_PHWO/

A2. Health and health services

Figure 5	
Name of indicator	Survey respondents who reported that if invited to attend a routine medical appointment, they would feel safe to do so
Data source	Public Engagement Survey, Public Health Wales
Time period	15 June – 25 July 2020 (weeks 11 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of Survey respondents who responded **'Agree'** to the following statement: *If I was invited to attend a routine medical appointment, I would feel safe to do so* Estimates (with 95% confidence intervals) have been disaggregated by age group and WIMD.
Assumptions/caveats	- Self-reported data - WIMD is an area based measure

Figure 6	
Name of indicator	Hospital admissions by week and WIMD
Data source	COVID-19 Recovery Profile 2020, Public Health Wales
Data collection period	29/12/2018 – 29/08/2019 (2019 Data) 28/12/2019 – 28/08/2020 (2020 Data)
Who does it measure?	Welsh residents who were admitted into hospital
What does it measure?	Age-Standardised rate of Welsh residents that are being admitted into hospital on an elective and emergency basis
Assumptions/caveats	The analysis includes all inpatient elective and emergency admissions. Breakdown for deprivation fifth is by place of residence. Data for hospital admissions are extracted from a live database and thus, subject to change. The Age-standardised rates are based on the 2013 European Standard Population. The denominator data used for the 2020 rates are based on 2019 mid-year population estimates as a proxy.
Data available at:	https://publichealthwales.shinyapps.io/COVID19_Recovery_Profile_PHWO/

Figure 7	
Name of indicator	Projected percentage change of adults with a) endocrine and metabolic problems; and b) adults with mental health problems
Data source	Economic modelling conducted by WHO Collaborating Centre, Public Health Wales
Time period	2020/21 – 2022/23
Who does it measure?	Welsh residents aged 16+
What does it measure?	Percentage of adults with chronic health problems
Assumptions/caveats	Projection of chronic conditions are based on survey data
Data available at:	https://phwwhocc.co.uk/resources/economic-consequences-of-covid-19-pandemic-outbreak-on-health-indicators-and-health-service-use-in-wales/

A3. Health and income security and social protection

Figure 8	
Name of indicator	Survey respondents who reported being worried about losing their job or not being able to find one, over the past week, by sex and age group
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 25 July 2020 (weeks 1 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of Survey respondents who reported worrying **'a little'** and **'a lot'** in response to the following question: *Over the past week, how much have the following issues been worrying you?* *Losing your job or not being able to find one* Estimates (with 95% confidence intervals) have been disaggregated by age and sex.
Assumptions/caveats	Self-reported data.

Figure 9	
Name of indicator	Survey respondents who reported that a member of their household has been suspended from work on lower or no pay (e.g. furloughed)
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 25 July 2020 (weeks 1 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of Survey respondents who responded **'Yes'** to the following question: *Has anyone in your household: Been suspended from work on lower or no pay (e.g. furloughed)?* Estimates (with 95% confidence intervals) have been disaggregated by age and sex.
Assumptions/caveats	Self-reported data.

Figure 10	
Name of indicator	Survey respondents who reported being in a worse financial situation as a result of the coronavirus restrictions
Data source	Public Engagement Survey, Public Health Wales
Data collection period	15 June – 25 July 2020 (weeks 11 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of Survey respondents who responded **'Worse'** to the following question: *As a result of coronavirus restrictions, would you say your current financial situation is worse about the same or better than normal?* Estimates (with 95% confidence intervals) have been disaggregated by WIMD fifth.
Assumptions/caveats	- Self-reported data. - WIMD is an area based measure

Figure 11	
Name of indicator	Coronavirus Job Retention Scheme (CJRS), claims received in Wales up to 31 July 2020 by sector
Data source	HM Revenue & Customs, UK Government
Data collection period	Claims received in Wales up to 31 July 2020
Who does it measure?	Employments in Wales
What does it measure?	The number of eligible employments furloughed and the number of eligible employment not furloughed, by sector in Wales
Assumptions/caveats	The output shows cumulative data which comes from employers having up until 31 July 2020 to submit claims for employees furloughed up to 30 June 2020. More up-to-date data on the Coronavirus Job Retention Scheme is available at: https://www.gov.uk/government/collections/hmrc-coronavirus-covid-19-statistics
Data available at:	https://www.gov.uk/government/statistics/coronavirus-job-retention-scheme-statistics-august-2020/coronavirus-job-retention-scheme-statistics-august-2020

A.4 Health and living conditions

Figure 12	
Name of indicator	Survey respondents who reported having left their home or garden in the past 7 days
Data source	Public Engagement Survey, Public Health Wales
Data collection period	18 May – 25 July 2020 (weeks 7 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of survey respondents who answered **'1'** to **'7'** to the following question: *In the last 7 days, how many days have you left your home or garden?* Estimates (with 95% confidence intervals) have been disaggregated by age group and WIMD fifth.
Assumptions/caveats	- Self-reported data - WIMD is an area based measure

Figure 13	
Name of indicator	Survey respondents who reported a good relationship between household members
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April - 09 May 2020 (weeks 1 to 5)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of Survey respondents who responded **'Very good'** or **'Good'** to the following Survey question: *At the moment would you say relationships between members of your household are?* Estimates (with 95% confidence intervals) have been disaggregated by age group and WIMD fifth.
Assumptions/caveats	- Self-reported data - WIMD is an area based measure

Figure 14	
Name of indicator	Households with access to private outdoor space in Wales
Data source	Administrative Data Research Unit, Welsh Government
Data collection period	June 2020
Who does it measure?	Welsh Households (as well as a subset of households with a shielding person(s))
What does it measure?	Percentage of households who have access to a private outdoor space, disaggregated by household with a shielded person and all welsh households
Assumptions/caveats	Where the Ordinance Survey data indicated the property is a flat, it was assumed the private outdoor space availability to be 'no'. Where a Unique Property Reference Number (UPRN) on the Shielded Patient List was missing or did not match to a UPRN on the green spaces data set, it was not possible to include the records in the household level analysis, as it was not possible to assess which patients may be living in the same residence. It is not clear how prisons, care homes and other institutions may be affecting the results.
Data available at:	https://gov.wales/shielded-patients-access-private-outdoor-space-during-coronavirus-covid-19-pandemic-june-2020-html

Figure 15	
Name of indicator	Crimes reported in Wales, by deprivation, count, 2020 compared to 2019
Data source	DATA.POLICE.UK WIMD 2019, Welsh Government
Data collection period	- January 2019 to September 2019 - January 2020 to September 2020
Who does it measure?	N/A
What does it measure?	Reported crimes that have taken place in Wales
Assumptions/caveats	- Street crime data is reported via the Lower Super Output Area (LSOA) in which the reported crime took place. For the purpose of this analysis, all LSOAs were assigned to their corresponding Welsh Index of Multiple Deprivation (2019) score (1- Most deprived, 5-Least deprived), which divides LSOAs into quintiles based on a number of socio-economic, health and spatial factors which influence deprivation. - Police and crime data is included when designing the WIMD, and plays a role in the configuring of LSOAs to a WIMD quintile. Therefore, police and crime data is represented on both sides of the equation in this analysis. However, police and crime data is responsible for a maximum of 5% of the total weighted data that influence the assignment of LSOAs to WIMD quintiles, and only 4% of that total is accounted for within this analysis. Subsequently, while police and crime data is present on both sides of the equation in this analysis, it is a relatively minor factor influencing the assignment of WIMD quintiles, and so the analysis conducted in this report still provides useful findings. - Breaches of COVID-19 pandemic regulations are recorded within 'Anti-Social Behaviour Crimes', while 'Violent crime' includes Possession of weapon, Violence and sexual offences and Public order. It does not include Arson and Criminal damage or Theft and Burglary.
Data available at:	Welsh Index of Multiple Deprivation quintiles: https://gov.wales/welsh-index-multiple-deprivation-full-index-update-ranks-2019 Crime data: https://data.police.uk/data/

A.5 Health and social and human capital

Figure 16	
Name of indicator	Survey respondents who reported using social media or family, friends and colleagues as their main source of information
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 09 May 2020 (weeks 1 to 5)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of respondents who responded **'Social Media/ Family, Friends and Colleagues'** to the following question: *'Which of these would you say is your main source of information?' - NHS, Government, PHW, News Outlets, Social Media, Family and Friends* Estimates (with 95% confidence intervals) have been disaggregated by age group and WIMD fifth.
Assumptions/caveats	- While it is possible to use social media to access other sources of information (i.e. credible news sources or official government sources), how participants used social media (and what information and information sources they utilised) was not clarified. However, participants were asked to select their main source of information from options including News sites and Official Sources (e.g. Welsh Government or Public Health Wales), and so it is assumed that participants who selected 'Social media' as their main source did not use social media to access more trusted sources as a main source of information. - Self-reported data. - WIMD is an area based measure

Figure 17	
Name of indicator	Survey respondents who reported having left their home to volunteer or support members of their local community
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 12 June 2020 (weeks 1 to 10)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of respondents who responded between **'1'** to **'7'** to the following question: *On how many days have you left your home to volunteer or support members of your local community?* Estimates (with 95% confidence intervals) have been disaggregated by the following: - Age group and sex - WIMD and sex
Assumptions/caveats	- Self-reported data - WIMD is an area based measure

Figure 18	
Name of indicator	General Certificate of Secondary Education (GCSE) attainment gap (females – males, percentage point), 2017 - 2020
Data source	Summer 2020 Equalities Impact Analysis of GCSE, AS, and A level results in Wales, Qualifications Wales
Data collection period	2017 to 2020
Who does it measure?	Welsh GCSE pupils (16 years old), 2017 through 2020
What does it measure?	The difference (as a percentage point) between females and males achieving grade A/7 and above, and grade C/4 and above
Assumptions/caveats	Three value have been provided for 2020, they are: - The attainment gap in 2020 grades from the standardisation process - The attainment gap in 2020 centre assessment grades (CAGs) - The attainment gap in 2020 revised provisional results
Data available at:	https://www.qualificationswales.org/english/publications/summer-2020-equalities-impact-analysis-gcse-as-and-a-level/

Figure 19	
Name of indicator	General Certificate of Secondary Education (GCSE) attainment gap (not eligible for free school meals (nFSM) – eligible for free school meals (eFSM), percentage point), 2017 - 2020
Data source	Summer 2020 Equalities Impact Analysis of GCSE, AS, and A level results in Wales, Qualifications Wales
Data collection period	2017 to 2020
Who does it measure?	Welsh GCSE pupils (16 years old), 2017 through 2020
What does it measure?	The difference (as a percentage point) between learners not eligible for free school meals and learners who are eligible achieving grade A/7 and above, and grade C/4 and above
Assumptions/caveats	Three value have been provided for 2020, they are: - The attainment gap in 2020 grades from the standardisation process - The attainment gap in 2020 centre assessment grades (CAGs) - The attainment gap in 2020 revised provisional results
Data available at:	https://www.qualificationswales.org/english/publications/summer-2020-equalities-impact-analysis-gcse-as-and-a-level/

A.6 Health and employment and working conditions

Figure 20	
Name of indicator	Survey respondents who report fulfilling any of the governments' key worker roles
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 25 July 2020 (weeks 1 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	The percentage of respondents who answered any of the following: Health, social care or relevant related support worker Teacher or childcare worker Transport worker Food chain worker Key public services worker Local or national government worker Utilities, communications and financial services Medicines or protective equipment To the following question: *Are you currently fulfilling any of the governments' identified key worker roles?* Estimates (with 95% confidence intervals) have been disaggregated by the following: - age group and sex - WIMD and sex
Assumptions/caveats	- Self-reported data - WIMD is an area based measure

Figure 21	
Name of indicator	Survey respondents who reported that they worry about work, even if they feel their job is secure, over the past week
Data source	Public Engagement Survey, Public Health Wales
Data collection period	03 April – 25 July 2020 (weeks 1 to 16)
Who does it measure?	Welsh residents aged 18+
What does it measure?	Survey participant who responded **'A lot'** and **'A little'** to the following question: *Over the past week, how much have the following issues been worrying you?* *Work, even if you feel your job is secure* Estimates (with 95% confidence intervals) have been disaggregated by age group and sex.
Assumptions/caveats	- Self-reported data

Figure 22	
Name of indicator	Workplace employment by industry
Data source	Annual Population Survey, Office for National Statistics
Data collection period	2018
Who does it measure?	All persons
What does it measure?	Workplace employment estimates, or estimates if total jobs, for Wales
Assumptions/caveats	'Other' includes – Agriculture, forestry and fishing; Mining and quarrying; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities; Wholesale and retail trade; repair of motor vehicles and motorcycles; Information and communication; Finance and insurance activities; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Public administration and defence; compulsory social security; Other industries
Data available at:	https://statswales.gov.wales/Catalogue/Business-Economy-and-Labour-Market/People-and-Work/Employment/Jobs/Whole-Workforce/workplaceemployment-by-industry-area

Figure 23	
Name of indicator	Percentage of the workforce who cannot social distance, by industry and role
Data source	Annual Population Survey, Office for National Statistics
Data collection period	January - December 2019
Who does it measure?	Adults in employment in the United Kingdom
What does it measure?	The percentage of the UK workforce that reported that they could not socially distance while at work, broken down by industry and role.
Assumptions/caveats	The physical proximity measure is defined as follows: 0 – I do not work near other people (beyond 100 ft.) 25 – I work with others but not closely (for example, private office 50 – Slightly close (for example, shared office) 75 – Moderately close (at arm's length) 100 – Very close (near touching) - Industries with a significant proportion of workforce within the 75-100 category (in this case >10%) are displayed - Wales only breakdown of this data was not available - Self-reported data
Data available at:	https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/adhocs/11838industrybyphysicalproximitytoothersintheuk2019

Figure 24	
Name of indicator	Deaths involving COVID-19 among health and social care workers, and people of the same age and sex in the population (those aged 20 to 64 years), age-standardised rate per 100,000
Data source	Office for National Statistics
Data collection period	Deaths registered between 09 March – 28 December 2020
Who does it measure?	Males and females aged 20 to 64 in England and Wales
What does it measure?	Deaths involving COVID-19
Assumptions/caveats	- Figures are for residents of England & Wales. - Age-standardised rate per 100,000 population standardised to the 2013 European Standard Population. This allows comparisons to be made between populations, which may have different age structures.
Data available at:	https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths adhocs/12819deathsinvolvingthecoronaviruscovid19amonghealthandsocialcareworkers inengland andwalesdeathsregisteredbetween9marchand28december2020

Figure 25	
Name of indicator	Employment in specific occupations at higher risk of COVID-19, by ethnicity and occupation
Data source	Welsh Government analysis of the Annual Population Survey
Data collection period	2019
Who does it measure?	High risk occupations in Wales
What does it measure?	Ethnic breakdown of workforce of high risk occupations in Wales
Assumptions/caveats	Percentages provided for the following are based on small sample sizes and should be treated with caution: - Taxi drivers and chauffers - Black and Ethnic Minorities (BAME) Social care workers - BAME Bus, coach and goods vehicle drivers - BAME Chefs
Data available at:	https://gov.wales/sites/default/files/statistics-and-research/2020-06/coronavirus-covid-19-and-the-black-asian-and-minority-ethnic-population-154.pdf

Figure 26	
Name of indicator	Projected unemployment rates in Wales following COVID-19
Data source	WHO Collaborating Centre, Public Health Wales
Time period	Quarter 1 2020 to Quarter 4 2023
Who does it measure?	Working age population in Wales
What does it measure?	Rate of unemployment (Projection)
Assumptions/caveats	Dependant on International Labour Organization data for Wales
Data available at:	https://phwwhocc.co.uk/resources/economic-consequences-of-covid-19-pandemic-outbreak-on-health-indicators-and-health-service-use-in-wales/

Annex B: Examples of local, national and international COVID-19 responses and recovery plans through an equity lens

Essential condition	HESR requirement to meet health equity	Welsh Government COVID-19 Reconstruction: Challenges and Priorities	Our plan to rebuild: The UK Government's COVID-19 recovery strategy	A UN framework for the immediate socio-economic response to COVID-19 (UN)	*COVID-19: Protecting people and societies (OECD)*
Health and health services	**Requirement for health equity** If those who are at risk of being left behind (such as people with disabilities, poorer households, single-parent households, migrants, ethnic minorities) do not face higher risks from poor-quality health services **Policy recommendation toward improved health equity** Countries can reduce unmet need for health care and financial hardship by identifying and addressing gaps in the coverage of universal health services and implementing interventions proportionate to need to ensure everyone has equitable access to good-quality health care services without increasing Out of pocket payments	Primary Care Capital Programme roll-out Town Centre First (prioritising integrated health and social care centres in town centres) Winter Protection Plan	• NHS and care capacity and operating model • Protecting care homes	• Health first: Protect health services and systems during the crisis	• Protecting people and places left behind (healthcare) • Responsive and coordinated governance

Health and Income security and social protection	**Requirement for health equity** Having a system in place of social protection that reduces the economic vulnerability of those most at risk of income insecurity **Policy recommendation towards improved health equity** Robust, multilevel, inclusive income security systems – with an unconditional tier at the base and supplemented by state-supported contributory schemes – have the highest effect in terms of reducing health inequities. These schemes include well-designed parental leave policies, statutory pensions, social protection for early years and families, and unemployment benefits	Economic Resilience Fund	• Economic and social support to maintain livelihoods and restore the economy	• Protect people: Social protection and basic service • Facilitate macroeconomic response and multilateral collaboration – *fiscal response*	• Protecting people and places left behind (social protection) • supporting small businesses and vulnerable workers
Health and living conditions	**Requirement for health equity** Access for all to quality and availability of housing and community amenities, green spaces and fuel **Policy recommendations towards improved health equity** Increasing the availability of good-quality, affordable new homes and involve local people and communities in the development process. This produces an accelerated effect in terms of helping to reduce health inequities for those falling behind Setting standards, through laws and regulations together with incentives – including subsidies to homeowners and landlords to improve housing availability, affordability, tenure and quality Increase public expenditure on housing and community amenities, such as street lighting, green spaces and public facilities	Increase in high-quality affordable housing (inc. Social housing) Expansion of the Optimised Refit Programme Free School Meals during holidays Superfast Broadband Programme	• More effective, risk-based targeting of protection measures	• Support social cohesion and community resilience	• Protecting people and places left behind (housing, environment, safety)

Health and social and human capital	**Requirement to meet health equity** Improved educational outcomes, levels of trust in others and a sense of control over the factors that influence a person's opportunities and choices in life **Policy recommendation towards improved health equity** Stimulate meaningful participation in society, trust in others and ability to influence decisions. This will contribute to stronger individual and social resilience, higher levels of mental well-being, and lower levels of morbidity. Improving accountability through political, social and judiciary systems can help to reduce inequities in sense of control and trust	Active Inclusion Programme (young and older people support) Childcare Development Fund Pupil Development Grant (support to the most economically vulnerable parents) Funding for public transport Disabled People's Organisations' COVID-19 Response Fund COVID BAME Advisory Group Violence Against Women, Domestic Abuse and Sexual Violence programme	• Public communication, understanding and enforcement	• Support social cohesion and community resilience	• Protecting people and places left behind (education services, local response)

Health and employment and working conditions	**Requirement to meet health equity** Equity in opportunities for secure, decently paid employment **Policy recommendation towards improved health equity** Implement equitable employment legislation and adequate social security systems which can improve health equity, as well as increase employment and contribute to economic growth Provide Income support and financial protection mechanisms, such as social transfers to avoid low wage-earners to be at risk of poverty and social exclusion	Economic Resilience Fund	• Economic and social support to maintain livelihoods and restore the economy • More effective, risk-based targeting of protection measures	• Economic response and recovery: Protect jobs, small and medium-sized enterprises, informal sector	• Protecting people and places left behind (social protection) • Supporting small businesses and vulnerable workers • Responsive and coordinated governance

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