

Potential mechanisms of unintended population health impacts from strict social distancing and recommendations for mitigation

This table uses Scotland as a case study to assess the nature and scale of the potential impacts and suggest recommendations. Figures given are for Scotland, with a total population of 5 million, or UK which has a total population of 66 million people.

Mechanism of health impact	Affected populations	Number affected (Scotland/UK)	Impact severity	Impact summary	Recommendations
Loss of income					
Workers who are ill or who are asked to self-isolate, but are not entitled to sick pay	People in precarious employment, on zero hours contracts or self employed	Estimated 1.87million people without access to Statutory Sick Pay (SSP) ¹ in the UK although this may underestimate the problem if SSP is not available during self-isolation	Loss of all income: for 7 days for those with mild illness or isolation only; for 14-21 days for those with more severe illness. This is likely to have markedly negative physical and mental health impacts ^{2,3}	High impact disproportionately affecting younger, women and their dependents, and amongst the already low paid	Immediate sickness benefits (at a minimum at SSP levels) for ill people or who are asked to self-isolate, including people who are self-employed or do not meet the criteria for SSP currently
Workers for whom the demand for their labour reduces as a direct or indirect consequence of restrictive social distancing	Workers in industries most affected by the response to the pandemic (tourism, hospitality, entertainment, sport, transport, self-employed, small/medium enterprises, etc.)	Uncertain number affected as this will depend on the degree of recessionary effect and the particular sectors involved. Could include all but the most 'essential' of sectors (e.g. health/social care, utilities, food chain) but difficult to define the limits to this	Unemployment is known to have large negative impacts on mental health ⁴ and some causes of mortality ⁵ ; however, the general recessionary effects on population health are more mixed ^{6,7} and are discussed below	High impact, disproportionately affecting those of working age and their dependents	Provide easily accessible incomes for all affected people. Abolish five week wait for UC. Implement minimum income guarantee or basic income at a level equivalent to minimum income for healthy living. Provide advice that allows people to continue working safely when physical distance can be maintained.
Workers whose workplace is closed temporarily to achieve social distancing	Workers in affected industries which do not continue to provide pay during that period (i.e. people in precarious employment, on zero hours contracts or self employed)	Uncertain number affected as this will depend on the degree of closure and the particular sectors involved. Could include all but the most 'essential' of sectors (e.g. health/social care, food chain) for some period of time, but difficult to define the limits to this (e.g. the need for transport to continue, IT support, etc.)	Loss of income for affected workers is likely to have markedly negative physical and mental health impacts ^{2,3}	High impact, disproportionately affecting younger, female adults and their dependents, and amongst the already low paid	Provide easily accessible incomes for all affected people

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Workers who have to reduce their work because of caring responsibilities	Working age adults with children and elderly relatives, particularly women	Uncertain number depending on the course of the pandemic (i.e. the number of people who are ill and require care at any one time)	Loss of income for affected workers is likely to have markedly negative physical and mental health impacts ^{2,3}	High impact, disproportionately affecting younger, female adults and their dependents, and amongst the already low paid	Provide an immediately accessible carers benefit for those without paid carers leave and bring this in line with the minimum income for healthy living.
Social security claimants who are not able to demonstrate meeting associated conditions	Some claimants of Universal Credit and legacy benefits	2.8m people in the UK were on the conditional form of Universal Credit in January 2020 ⁸ – the number who may be at risk of breaking conditions due to the pandemic or the response will be substantially lower	Loss of income for affected people is likely to have markedly negative physical and mental health impacts ^{2,3}	High impact, disproportionately affecting those who are on low incomes and have pre-existing health conditions	Suspend conditionality on all currently received benefits. Suspend further migration (natural or planned) to Universal Credit for existing claimants too to avoid adding to income disruption. Suspend recovery of historic public sector debt repayments (e.g. tax credits).
Income insecurity may result in risks to maintaining housing	Those living in rented housing or with an outstanding mortgage, who might be affected by any of the above forms of income shocks	4.5m households were in private rental accommodation in 2017; ⁹ there were around 5m households in social rented accommodation in 2018, ¹⁰ and there are a further 9.2m households with outstanding property debts (the majority of which will be mortgages). ¹¹ It is difficult to accurately quantify the number who are likely to be affected by the above income shocks. However, it is likely to be substantial.	Actual loss of housing has substantial impacts on health, but even the threat of housing insecurity is likely to have adverse impacts on mental health and probably also on physical health and its determinants.	High impact, disproportionately affecting those on low incomes and younger households.	Introduce measures to suspend rental and mortgage payments, evictions, and take the actions detailed above to address income insecurity (including mortgage and rent payment suspension for both private and social landlords). Extend Scottish Options of maintaining housing benefit direct to landlord to England and Wales. Monitor the impact of replacing Support for Mortgage Interest (SMI) with a loan.

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Macroeconomic consequences					
Economic recession	The groups most frequently adversely affected are those in low paid and precarious work	This is dependent on the severity and length of any recessionary impact.	The impacts of recession on health are mixed and not necessarily negative overall. <small>Error! Bookmark not defined.</small> Improvements occur through lower mortality from road-traffic accidents and alcohol-related causes but suicide and mental health problems increase.	Mixed impacts with mental health problems being the greatest risk	The recommendations in this area relate to supporting people's incomes (as per the rows above) and mental health (as per the rows below)
Longer term failure of businesses with loss of employment and income	Workers in industries most affected by the response to the pandemic (tourism, hospitality, entertainment, sport, transport, self-employed, small/medium enterprises, etc.)	Very uncertain and dependent on the depth and length of any recession and the effectiveness of economic mitigation measures	The direct impacts of reduced employment and income over the long-term will disproportionately affect the working age population through poorer mental health and increased mortality. The long-term impacts of the 1980s recession and the associated restructuring of the economy caused substantial excess mortality and morbidity. ¹²	This is uncertain but could be substantial.	In addition the recommendations elsewhere, consider opportunities to retrain the workforce into more sustainable and growth areas of the economy (e.g. care sector, refitting of heating systems).
Falling value of pensions assets	Pensioners - people of pensionable age dependent on private pensions, those who are soon to move into pensionable age and those currently of working age whose pension value will be reduced in the future. This will impact most on higher income groups who are much more likely to have private pension wealth. ¹³	In the long-run this will affect everybody with a private pension (estimated at 53% of the population ¹³), but this will have particular short-run impacts on those close to retirement age or currently dependent on private pensions.	There will lower incomes from pensions in the medium to long run, but state pension payments will continue and avoid people moving to zero income. The impacts are therefore likely to be modest although some people currently on higher incomes may notice large decreases in the medium to long-run.	The impact is likely to be greater in the medium to long-run and for those already in receipt of higher incomes	Ensure that state pensions are not eroded in the coming period to provide a minimum income for this group

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Reduced government revenue	This depends on how governments react to lower revenues. If an austerity approach is taken to balance the public finances this will impact on public services, public sector employment and social security. If government borrowing is increased to maintain spending this may have impacts through inflation and greater government debt in the long-run.	Uncertain but could be substantial if an austere approach is taken. Mortality rates for the poorest 40% of the Scottish population have been increasing since 2012, and this is likely to be attributable to austerity policies. ¹⁴	Uncertain but could be substantial if austerity approach is taken. The best available evidence is that austerity regimes are associated with an increase of mortality rates by 0.7%. ¹⁵	This is entirely dependent on the government's response to lower revenues. An austere approach could have large negative consequences, particularly for low income groups, unless this was implemented through the mechanism of higher taxes on those with greater incomes and wealth. ¹⁶	Avoid economic policies which reduce funding for public services and for social security.
Home isolation					
Social isolation	Particular vulnerable groups might include: older people living alone and people with mental health conditions.	More than a third of households contain a single adult living alone – 22% households are single adults of working age, 14% households are single older adults 19% of adults over 16 have a GHQ score that indicates potential mental health problems	Social isolation (defined as pervasive lack of social contact or communication, participation in social activities, or having a confidante) is associated with 29% increase in mortality. ¹⁷ Quarantine is associated with negative psychological effects including post-traumatic stress symptoms, though these are less in voluntary quarantine. ¹⁸	Moderate impact on mental health, disproportionately affecting those with pre-existing mental health conditions.	Coordinated outreach efforts will be required to reach vulnerable groups, especially those living alone. These will most likely make use of both online and telephone modalities.

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Home isolation may lead to family stress and increase in family violence	Families at greater risk include those on a low-income, at risk of substance use and with previous domestic abuse.	In 2014–17, one in six households in Scotland (17%) with three or more children was overcrowded, compared to 9% of households with two children and 3% of households with one child. Among households with four or more children, the percentage reporting being overcrowded increased to 28%. (Scottish Household Survey) There are about 60,000 domestic abuse incidents in Scotland every year, with young women most affected ¹⁹ . Over 2,500 children are on the child protection register ²⁰ .	Impact of increase in family violence and abuse would be severe for those affected.	Moderate impact on family stress for many, with severe effects for most vulnerable.	Encourage and support communities and voluntary organisations to offer support to vulnerable families. Provide safety advice and support services for women at risk of domestic abuse.
Home isolation will increase physical inactivity	Everyone who is home isolating People in overcrowded homes and families on lower incomes without access to private gardens are most at risk.	Everyone in home isolation. Overcrowded/ low income households as above.	Physical inactivity is a significant risk factor for physical and mental morbidity.	Physical inactivity for a prolonged period of time could impact on both physical and mental health.	Information and advice for people isolating at home – include advice on safe physical activity and mental wellbeing. Encourage daily activity.
Fuel poverty for families having to heat homes all day	Low income families	A third of households in Scotland are fuel poor.	Living in a cold home is associated with cardio-respiratory conditions, poor mental health and slowed growth in children ²¹ .	Increased fuel poverty	Encourage fuel companies to offer delayed fuel payments, provide prepaid payment cards for families in financial hardship
Changes to health-related behaviours	Whole population People with pre-existing substance or gambling issues People in crowded or difficult home contexts likely to be more vulnerable.	0.8% of Scottish adults are problem gamblers ²² 24% of Scottish adults drink at hazardous or harmful levels and 19% smoke ²³	Potentially significant impacts for people at high risk of addictive behaviours	Stress and boredom may cause behavioural responses leading to increased substance use, online gambling.	Provide advice and support on health-related behaviours including substance use and gambling. Maintain and enhance existing support services. Work with providers to limit online gambling.

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Impacts on those at risk from addictive substances (such as heroin or alcohol), including withdrawal or resumption of use for those in recovery.	People with active problems with addictions or in recovery	A small number of people are affected by addiction to alcohol and other substances at any one time, but they typically have poor pre-existing health. For example, in SHS 1% of adults had possible alcohol dependence (based on AUDIT score)	Rapid withdrawal from alcohol and some other substances can result in severe physical health problems, including death. People in recovery from substance issues may be at risk of relapse.	A small number of people with addictions may experience withdrawal-related harms or are at risk of relapse. While the number of people affected are low, they are a highly vulnerable group and typically have poor pre-existing health.	<p>Advise and support about moderating alcohol consumption.</p> <p>Provide remote access to support services including Mutual Aid.</p> <p>Work with community services to provide advice to avoid abrupt withdrawal.</p> <p>Ensure availability of emergency facilities for managing addiction withdrawal.</p>
Potential rise in unintended pregnancies	Women of reproductive age			Potential increase in unintended pregnancies	Ensure continued provision of contraceptive services
<i>Disruption to health and social care services</i>					
Access to emergency health care	Whole population	140,000 to 150,000 people seen by Emergency Departments every month ²⁴ in Scotland.		Potentially substantial if emergency health care is disrupted.	Existing NHS prioritisation approaches.
Delays to non-urgent health care provision (e.g. cancellation of clinics and planned operations)	People with long-term health conditions most affected	Estimated 2million people live with one or more long-term conditions in Scotland ²⁵ .	Delays to treatment could result in ongoing unresolved morbidity and delays to prevention activities (such as cancer screening) could result in longer term adverse health impacts.	Health impacts are likely to increase, the longer disruption to health care provision lasts.	
Disruption in care provision	People with social care needs	An estimated 1 in 24 people receive some form of social care Almost 68,000 receive home care ²⁶	People already in receipt of social care assistance and particularly the elderly might be particularly at risk of increased mortality if there are reductions to services, as has been observed following some austerity policies.	Large health impacts on many vulnerable people if services not maintained.	Care providers contingency planning – it is important to provide reasonable assumptions to support them, and fund any increase in cost of care

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People may be reluctant to use health and social services for routine or emergency care	People who require health or social care	260,000 admissions to acute services and 357,000 new out patient attendances per quarter in Scotland ²⁷			
Cancellation of face to face interpreting services	People who require interpreters including BSL	Estimated 87,000 Deaf people in the UK who use BSL as their preferred language ²⁸ In 2011 census 62,000 people in Scotland could not speak English well and over 11,000 not at all ²⁹	Inability to communicate may lead to inappropriate care or inability to access other essential services.	Potential for people who require interpretation to face barriers to healthcare and other services if alternatives to face to face interpreters are not available.	Ensure easy access to online or phone interpreting services
<i>Disruption to other services and supply chains</i>					
Loss of face to face support to help vulnerable groups access social security systems (getting ID, negotiating IT systems).	Those making use of CAB Universal Support, GP welfare Rights service in surgeries etc.	Unknown, but likely to include groups including those with limited access to IT or low IT literacy, people who are homeless and those with learning difficulties.	Increased risk of destitution for groups affected.	Existing inequalities in access to social security likely to be maintained or even increased.	Provide telephone support for particularly vulnerable groups without IT access
Food access –potential disruption caused if workers in any/all parts of the supply chain were unable to work due to self-isolation or needing to care for children as schools close. Potential shortages due to panic buying.	Whole population would be affected if food supplies were disrupted People without local support or social networks may be unable to access supplies if self-isolating.	The whole population is reliant on complex ‘just in time’ food supply chains.	Food is a prerequisite for health, so food shortages would have a severe impact on health.	High impact on health if food production, distribution and supply chains are not maintained throughout the period of social distancing. High impact on individuals self isolating who do not have friends or neighbours nearby able to deliver food to them.	Prioritisation of food supply chain. Measures to deliver food to people self isolating. Potential to use spare capacity in restaurants that have lost business.

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<p>Essential utilities (such as water, electricity, internet etc.) Potential disruption if workers are unable to work due to self isolation or needing to care for children if schools close.</p> <p>Potential shortages if energy and internet overloaded by increase demand from home workers.</p>	Whole population	<p>The whole population relies on provision of basic utilities.</p> <p>The number of people relying on home internet services will increase as more people work from home.</p>	<p>Disruption to water and sanitation could have substantial health impacts.</p> <p>Disrupted energy supplies could cause cold-related morbidity and mortality,</p> <p>Loss of internet access would affect online ordering and other services, ability of many workers to continue working, and increase social isolation.</p>	High impacts on health if essential utilities are not functioning.	Prioritisation of essential utilities across all the supply chains.
<i>Disruption to education</i>					
Lack of availability of school provision could lead to healthcare and other essential staff being unable to work	NHS and other essential staff	Public sector staff, including healthcare staff, are more likely to be women and have caring responsibilities.	Staff being unable to continue providing essential services due to the need to provide childcare may substantially threaten the capacity for continued service provision. There is a risk that grandparents or others potentially more vulnerable to coronavirus may provide childcare.	Potentially large impact on health, as a consequence of a lack of availability of healthcare or other essential services and transmission to vulnerable groups.	Consider alternative childcare provision arrangements
'Holiday hunger' effect for children usually reliant on free school meals during term times, plus disruption of novel programmes which aim to tackle holiday hunger	Children in low income families	<p>4.1M children were living in poverty in 2017-18 (30% of all children).³⁰</p> <p>Over 260,000 children are registered for free school meals in Scotland³¹</p>	Food is a prerequisite for health. A lack of food or inadequate nutritional content can impede child development and lead to both short-term and long-term physical and mental health problems.	Impact may be substantial and will particularly affect children living in low-income households (which may already be affected by other income threats above).	Food provision for low income families: options might include SG and local authorities make use of existing mechanisms (Best Start cards and/or the cashless cards children use to access FSM) or for the SG to bring forward the Scottish child payment and the UK Govt to adopt something similar

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Reduced physical activity amongst children	All children	23% of females and 34% of males aged 11-12 years met the guidance for physical activity in 2017, according to the SHeS.	Physical activity patterns in childhood appear to be important for establishing long-term patterns of behaviour for the rest of life. Reduced physical activity among children may therefore increase the risk of many common health conditions, such as heart disease and stroke.	Potentially moderate longer term impact of reduced physical activity which might affect deprived groups (who are less likely to have access to a garden) more.	Longer term consideration is needed for more interventions to increase physical activity, particularly targeted at disadvantaged children.
Delays to training or accreditation of health professionals may result in being unable to practice in a timely manner, exacerbating staff shortages within the health service	Trainee health professionals (e.g. medical students) and existing health professionals intending to do expanded roles	Approximately 6,000 medical students graduate every year in the UK, with larger numbers of student nurses and other staff completing their degree.	Newly available staff and expanding the competency of existing staff could help in support the direct pandemic response, as well as help with ensuring the continuity of routine services.	Delays to making newly trained health professional staff available to the NHS could have a moderate impact on the capacity to continue delivery of essential health services.	Ensure universities have processes to allow students to graduate on-time. Consider the potential for more junior health students to provide assistance. Ensure access to essential training in a timely manner which can be upscaled quickly to allow expanding competencies of staff e.g. online training for use of ventilators.

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Education is a key determinant of health, and that the impact on children's education if schools, further and higher education closed for a significant time (or a critical time)	School aged children Adults who are receiving further and higher education	Almost 700,000 pupils in publicly funded schools in Scotland ³² Almost 50,000 school leavers each year ³³ – these may be most severely affected by disruption.	Educational attainment is one of the best predictors of life expectancy ³⁴ . In the UK life expectancy is 4 years higher for people with the highest educational attainment compared to those with the lowest ³⁵ . Cancellation of exams (e.g. the SQA exams which are due shortly) is likely to have the longest lasting consequences. The greatest impact will be on children in families with fewer resources, eg without a computer to access learning resources online. It may be less possible to continue distance delivery of further education and more vocational courses than some higher education courses.	Longer term high impact, including on socioeconomic inequalities in health.	A diversity of outreach approaches to meet the educational needs of low-income children will be required. Greater investment may be required to support further education students when facilities resume normal delivery.
Transport and Greenspace					
Suspension of public transport will reduce access to essential employment and services	Low income groups who do not have access to private transport Single pensioners are least likely to own a car	29% of households lack access to a car ³⁶	People without access to a car will be excluded from access to shops and essential services	High impact for people who are unable to access essential services	Provide advice to allow pedestrian and cycling access while maintaining safe distances. Explore whether dial a bus could continue to be used while complying with the 2m rule.
Air quality and other impacts from traffic – may be improved if fewer vehicle movements, but imposing restrictions on public transport but not private cars may increase pollution and other traffic impacts	Whole population People with respiratory conditions particularly vulnerable to air quality impacts	6.5% of the Scottish pop had asthma in 2015/16 87 people per 100,000 admitted to hospital with asthma in 2018/19 ³⁷	Potentially measurable effects on cardio-respiratory health, road traffic injuries and other	Reduction in traffic could lead to improvements in cardio-respiratory health, reduced road injuries. Potential benefit greatest for people with respiratory conditions	Provide support for active transport modes during and after the restrictions – eg road reallocation, recognise bike shops as essential service

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Longer term reluctance to use public transport may increase private car traffic, increasing air pollution, crashes, noise and physical inactivity.	As above	As above	Air pollution, crashes and physical inactivity all have significant adverse impacts on health	Potential for long term shift towards private car travel would have significant negative impacts on health of whole population.	Long term support for public transport and encouragement of modes other than private cars
Greenspace	Whole population, especially people without access to private gardens Children, older people, women and people in low income groups most affected.	In the UK 13% of households have no garden. ³⁸	Exposure to high quality greenspace is associated with better physical and mental health. Impacts are most significant for children, older people, women and low income groups. ³⁹	Loss of beneficial health effects of greenspace exposure.	Continue to maintain local greenspaces and encourage safe use.
Carbon emissions	Global population	Global population	Globally a significant number of deaths are attributable to climate change	Reduction in traffic will have positive impact on carbon emissions	Consider how more remote working longer term can be achieved. Prioritise more sustainable sectors of economy for support.
<i>Social disruption</i>					
Crime – reduced policing capacity, potential for looting if shops closed, potentially rioting if supplies run out	Likely to be higher risk in communities more affected by impacts above	Unknown	Potentially severe impact if widespread social unrest	Potential increases in crime and social disorder, including looting.	Other recommendations to mitigate impacts will reduce risk of disorder. Prioritise higher risk communities for support.
<i>Population psychosocial impacts</i>					
Widespread fear and anxiety	Whole population People at higher risk may include: People with mental health problems People with communication barriers who do not understand communications	5.3M people in Scotland	Curtailed of liberties are likely to cause fear and anxiety amongst the general population, in addition to some at-risk groups having particularly adverse mental health impacts. There is a risk of some social groups being stigmatised (e.g. early on incidents of some ethnic groups, but potentially older people).	Likely to be small-moderate impacts for most people, with potential for more substantial impacts for specific social groups at risk of being stigmatised.	Clear communication which facilitates community cohesion.

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Stigma/discrimination/harassment against groups thought to pose high risk of transmission	People in particular ethnic groups Elderly people and those with disabilities	Over 33,000 people of Chinese ethnicity in Scotland at time of 2011 census Over 1million people are aged 65+ in Scotland 8% of adults are unable to work due to a disability.	Likely to cause distress and may cause/exacerbate mental health impacts.	Stigma, discrimination and harassment against populations of people blamed in some way for the pandemic could worsen social isolation, and cause distress and mental health impacts in some.	Clear messaging that avoids stigmatising people who have Co-V or linking it to specific populations
Community cohesion	Whole population	Whole population	Positive responses by individuals and community organisations may increase community cohesion		Encourage and provide advice to enable community actions to mitigate adverse effects.

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