

PUBLIC MENTAL HEALTH BRIEFING ON COVID-19

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FOREWORD

Public mental health is assuming an important place in the field of psychiatry and mental health. Mental disorder and poor mental wellbeing have large impacts across population health which crises such as COVID-19 will further increase.

Despite the existence of effective public mental health interventions, only a minority of those with mental disorder receive any treatment even in high-income countries with far less provision of interventions to prevent associated impacts, prevent mental disorder from arising or promote mental wellbeing. As a result of the COVID-19 pandemic, a population approach to address this public mental health intervention gap requires even more urgent global attention to prevent the anticipated increased prevalence of mental disorder and poor mental wellbeing.

The World Psychiatric Association occupies a unique position in the field of psychiatry and mental health. It was established in 1950 to promote the advancement in different areas of psychiatry and mental health and represents the voice of psychiatrists through national psychiatric societies. WPA's 2020-23 Action Plan has highlighted public mental health as a priority area. The establishment of a public mental health working group to formulate recommendations for WPA's future work was an important step towards achieving such goals and objectives for WPA's work during the next triennium.

This briefing on public mental health on COVID-19 from WPA's public mental health working group illustrates an approach that WPA would like to follow in coming years. The document exemplifies a population approach to mental health even more useful during situations such as COVID-19 which includes assessment of population need and steps to improve coverage, outcomes and coordination of different public mental health interventions to mitigate the crisis.

Thanks to Dr Jonathan Champion for leading this work which WPA is pleased to share with our members societies to support the reduction of COVID-19's impact on population mental health.

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Chair WPA Standing Committee on Planning (2017-20)

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1. EXECUTIVE SUMMARY

COVID-19 was assessed as a pandemic on 11/3/20 and has rapidly spread across countries. While 81% of those affected have mild or no symptoms, 14% have severe disease requiring hospitalisation and 5% have critical disease with associated mortality (Wu & McGoogan, 2020). Analysis of 11 European countries at the beginning of May 2020 found that although COVID-19 infection had been limited to 3.2-4.0% of the population through implementation of non-pharmaceutical interventions, continued intervention was needed to prevent further waves of infection (Flaxman et al, 2020). In low-and middle-income countries, healthcare capacity is more limited which makes early implementation of non-pharmaceutical interventions even more important (Walker et al, 2020).

Impact of mental disorder

In 2016, mental disorder resulted in at least 20% of global disease burden (WHO, 2018a) due to high prevalence rates, most lifetime mental disorder arising before adulthood and a broad range of impacts across health (including higher rates of physical ill-health and associated 7-25 reduced life expectancy), education, employment, social interaction, stigma and crime (Campion, 2019).

Impact of COVID-19 on mental health

Evidence outlined in this briefing suggests that pandemics such as COVID-19 are associated with increased prevalence of mental disorder and poor mental wellbeing. This is likely mediated through effects on different risk factors including socioeconomic inequalities, poverty, unemployment, debt, recession, food insecurity, child adversity, violence, work related stress, social isolation, physical illness, reduced access to healthcare, physical inactivity and other health risk behaviour.

People with mental disorder are also likely to be at higher risk of COVID-19 infection and mortality given their higher rates of health risk behaviour and physical ill-health which is responsible for most of their 7-25 years reduced life expectancy (Campion, 2019).

Groups whose mental health is disproportionately affected by pandemics include those with existing mental disorder, health professionals and carers, children and families, particular ethnic groups, offenders, people infected with COVID-19, refugees and older people including in care homes.

Public mental health interventions

Effective public mental health (PMH) interventions exist to treat mental disorder, prevent associated impacts, prevent mental disorder from arising, and promote mental wellbeing and resilience with many interventions resulting in economic benefits even in the short term (Campion, 2019). Delivery of these interventions occurs at individual, community and national levels with higher risk groups requiring more targeted approaches to prevent widening of inequalities. Public mental health interventions are even more important during pandemics such as COVID-19 to prevent anticipated associated mental disorder, impacts and poor mental wellbeing.

Public mental health implementation gap

Despite existence of effective PMH interventions, implementation is poor even in high income countries (Campion, 2019; WHO, 2018b). Globally, only a minority of those with mental disorder receive any treatment, coverage of interventions to associated impacts of prevent mental disorder is much less, while coverage of interventions to prevent mental disorder or promote mental wellbeing is negligible (WHO, 2018b). This implementation failure contravenes the right to health (Campion & Knapp, 2018) and results in population scale suffering and associated impacts which are amplified during crises such as pandemics.

COVID-19 presents an additional triple global PMH challenge (Campion et al, 2020a): the first challenge to prevent associated anticipated increased mental disorder and reduced mental wellbeing across populations; the second to protect people with mental disorder from COVID-19 and associated impacts given their increased vulnerability; and the third to provide appropriate PMH interventions to staff and carers looking after those with COVID-19. Interventions to prevent, treat and mitigate effects of COVID-19 are likely to further impact on mental health particularly in people with or at risk of mental disorder.

Action to address the public mental health implementation gap including during COVID-19

Prior to the COVID-19 pandemic, there was already a compelling need to address the failure of scale implementation of evidence based PMH interventions given the associated impacts and economic costs. Since COVID-19, the case for scale implementation has become even more urgent (Campion et al, 2020a).

Public mental health (PMH) practice including during COVID-19 is a key mechanism to reduce the implementation gap in both the immediate and longer term in the following ways (Campion, 2019; Campion et al, 2020a):

1. Assessment of national population size, impact and cost of the current and future PMH intervention implementation gap taking into account COVID-19.
2. Identification of assets to address gaps.
3. Assessment of impact and associated economic benefits from improved coverage of PMH interventions (Campion & Knapp, 2018).
4. Use of information from three steps above to inform national policy and transparent decisions about acceptable level of coverage of different PMH interventions. This informs population level of provision, required resource, commissioning and coordination by organisations including health, public health, education, employers, housing and criminal justice.
5. Communication to the general population, higher risk groups, and health and allied professionals to improve awareness and reduce distress associated with uncertainty.
6. Operationalization of intervention implementation at national and local level.
7. Evaluation of coverage and outcomes including for higher risk groups.

Population access to PMH interventions including during a pandemic can be improved in the following ways (Campion, 2019; Campion et al, 2020a):

- PMH training for health and allied professionals: This includes online training (Campion, 2020) and covers COVID-19 related issues and interventions to both address and prevent COVID-19 including in those with existing mental disorder

- Improving population knowledge about mental health including related to COVID-19.
- Use of digital technology: Many PMH interventions including treatment can be delivered digitally (Campion, 2019). Digital technology can also support mental health of health professionals and carers, reduce social isolation, address stigma, deliver PMH training and support contact tracing.
- Settings and group approaches: A large proportion of the population spends much of their time in particular settings such as school and workplace where more than one PMH intervention can be delivered. During lock down or quarantine, PMH interventions can also be delivered digitally to such groups. For healthcare workers, clear communication, access to adequate personal protection, adequate rest, and both practical and psychological support were associated with reduced psychiatric morbidity (Kisely et al, 2020).
- Integrated approaches to facilitate coordinated delivery of PMH interventions across sectors
- Maximising existing resources such as self-help, task shifting to less trained individuals, improving concordance with treatment and traditional healers particularly in LMICs.
- Ensuring application of relevant legislation.

Public mental health practice improves coverage of interventions to treat mental disorder, prevent associated impacts, prevent mental disorder from arising and promote mental wellbeing. This results in broad impacts across health, education and employment with associated economic returns even in the short term. The impact of PMH practice and improved coverage is even greater during pandemics such as COVID-19 and should be an integral part of the public health response to COVID-19.

2. BACKGROUND OF COVID-19 PANDEMIC

At the end of 2019, a novel coronavirus was identified as the cause of pneumonia cases in Wuhan, China. It then rapidly spread across countries and on 11/3/20, WHO assessed COVID-19 as a pandemic. Some aspects of the COVID-19 pandemic are similar to the 2003 outbreak of severe acute respiratory syndrome (SARS) caused by another coronavirus. Similarities between COVID-19 and SARS include infectious cause, epidemiological features, fast transmission and insufficient preparedness to address (Xiang et al, 2020a).

Transmission of COVID-19

- Direct: Person to person spread occurs through respiratory droplets when breathing (Yan et al, 2018), talking, coughing or sneezing although wider airborne transmission is also possible (Morawska & Cao, 2020; Morawska et al, 2020; Morawska & Milton, 2020).
- Indirect: Human coronaviruses can persist on inanimate surfaces like metal, glass or plastic for up to 9 days (Kampf et al, 2020) and spread can occur by touching affected surfaces and then the eyes, mouth or nose.
- Incubation period and infectivity
 - Reproduction number (R_0) is the average number of new cases generated by an infectious person. If more than one, number becoming infected will increase while if less than one, number becoming infected will decrease. R_0 for COVID-19 was 3.28 (Liu et al, 2020) which is higher than for SARS coronavirus.
 - A study of 1099 patients with COVID-19 found median incubation period of 4 days (interquartile range 2-7 days) (Guan et al, 2020).
 - Another study of 181 confirmed cases found median incubation period of 5.1 days with 97.5% developing symptoms within 11.5 days (Lauer et al, 2020).
 - Viral shedding was prolonged in those infected with a study of 137 COVID-19 survivors finding median duration of viral shedding of 20 days (IQR 7-24 days) (Zhou et al, 2020).
- Pre-symptomatic transmission
 - Transmission by asymptomatic people accounted for 6.4% of infections in an analysis of 157 infected people (Wei et al, 2020) but 44% of cases in a modelling study (He et al, 2020).
 - A review found 5-80% of people with COVID-19 were asymptomatic with some asymptomatic cases becoming symptomatic over the subsequent week (Henneghan et al, 2020).
 - A meta-analysis preprint found proportion of asymptomatic cases was 15% (Byambasuren et al, 2020). Four studies found direct evidence of transmission of infection by asymptomatic cases but suggested considerably lower rates than by symptomatic cases.
- Hospitals are high-risk settings: A Chinese study of 138 patients found 43% acquired COVID-19 infection in hospital (Wang et al, 2020a). The main amplifier of persistent outbreaks of Middle East Respiratory coronavirus (MERS-Cov) was healthcare facility transmission (Baharoon & Memish, 2019). This implies the need for testing of both symptomatic and asymptomatic health care workers (Black et al, 2020).

Mutation and immunity

- RNA viruses which include COVID-19 mutate 100 times more quickly than DNA viruses (Peck & Luring, 2018).
- Immunity can develop to other coronaviruses and usually offers some protection against other beta-coronaviruses (Huang et al, 2020a; Kissler et al, 2020).
- Recurrent infection with the same coronavirus is rare but if does occur, presents with milder symptoms and reduced viral excretion (Huang et al, 2020a).
- There is currently no evidence that people who have recovered from COVID-19 and have antibodies are protected from a second infection (Andersson et al, 2020; WHO, 2020b).

3. PHYSICAL IMPACTS OF COVID-19

Physical impacts of COVID-19 is set out in the following sections

- 3.1 Symptoms
- 3.2 Risk factors
- 3.3 Mortality

3.1 Symptoms

Most frequent symptoms of COVID-19 include fever (88.7%), cough (57.6%) and dyspnoea (45.6%) (Rodriguez-Morales et al, 2020). Another meta-analysis found symptoms included fever (89.1%), cough (72.2%), muscle soreness of fatigue (42.5%) and acute respiratory distress syndrome (14.8%) (Sun et al, 2020). Other symptoms include olfactory dysfunction (52.7%), gustatory dysfunction (43.9%) (Tong et al, 2020), diarrhoea (9.1%), nausea/ vomiting (5.2%) and abdominal pain (3.5%) (Wang et al, 2020b). A study of an Italian town found that 42.5% of confirmed cases were asymptomatic (Lavezzo et al, 2020).

A study of 44,500 confirmed cases in China found that (Wu & McGoogan, 2020):

- 81% had no or mild symptoms.
- 14% had severe disease requiring hospitalisation and oxygen support (e.g. with dyspnoea, hypoxia or >50% lung involvement on imaging within 24 to 48 hours).
- 5% had critical disease involving acute respiratory disease syndrome, sepsis and septic shock, multiorgan failure including acute kidney injury and cardiac injury.

A study of 16,749 people with COVID-19 admitted to hospital in the UK found that mean duration of symptoms before admission was 4 days (Docherty et al, 2020).

3.2 Risk factors

- Age and gender
- Ethnicity
- Deprivation
- Urbanicity
- Pre-existing physical health conditions
- Mental disorder
- Disability
- Smoking
- Occupational
- Place of work
- Care homes

Age and gender

In England, proportion testing positive for COVID-19 was 0.38% in those aged 2-11 years, 0.30% in those aged 12-19 years, 0.57% in those aged 20-49 years, 0.33% in those aged 50-69 years and 0.34% in those aged 70 and above (ONS, 2020a). In China, severe illness and mortality were more common in males and older people (Wu et al, 2020). In England Wales, mortality rates increased with age and were double in males compared to females (ONS, 2020b).

Ethnicity

- A systematic review suggested that Black, Asian and Minority Ethnic (BAME) people were at increased risk of COVID-19 infection and also had worse clinical outcomes (Pan et al, 2020).
- In England and Wales, risk of COVID-19 related death was 3.3 times higher in Black men and 2.4 higher in Black women compared to White men and women after adjusting for age (ONS, 2020c). This reduced to 2.0 times higher for Black men and 1.4 times higher for Black women after adjusting for region, population density, socio-demographic and household characteristics. People of Bangladeshi, Pakistani and Indian ethnic background were at 1.6 times higher risk of COVID-19 related death than White people after adjusting for region, population density, socio-demographic and household characteristics.
- A cohort study of 30,693 admitted with COVID-19 in England found that people from ethnic minorities were more likely to be admitted to critical care and receive ventilation than white people despite similar disease severity on admission, similar duration of symptoms, and being younger with fewer comorbidities (Harrison et al, 2020). South Asians were at greater risk of dying in part to a higher prevalence of pre-existing diabetes.

Deprivation

In England, age standardised mortality of COVID-19 related death was more than twice the rate in the most deprived neighbourhoods (128.3 deaths per 100,000 people) compared with least deprived (58.8 deaths per 100,000 people) (ONS, 2020d).

Urbanicity

Age standardised COVID-19 mortality was several times higher in urban compared to most rural areas in England (ONS, 2020d).

Pre-existing physical health conditions

Severe illness and mortality were more common in those with other physical health conditions including:

- Cardiovascular disease (Pranata et al, 2020a; Tian et al, 2020).
- Hypertension (Pranata et al, 2020b; Tian et al, 2020).
- Chronic lung disease (Alqahtani et al, 2020).
- Diabetes (Barron et al, 2020; Holman et al, 2020; Huang et al, 2020b; Kumar et al, 2020; Tian et al, 2020; Wu et al, 2020; Zhou et al, 2020).
- Cancer (Liang et al, 2020; Venkatesulu et al, 2020).

In England and Wales in April 2020, 91% of COVID-19 deaths occurred in people with at least one physical health condition, with dementia and Alzheimer disease involved in 20.4% of all deaths and ischaemic heart disease involved in 10.8% of deaths (ONS, 2020b).

COVID-19 has also been estimated to increase deaths related to HIV, TB and malaria by up to 10%, 20% and 36% respectively over five years in high burden settings (Hogan et al, 2020).

Mental disorder

People with mental disorder have higher levels health risk behaviour such as smoking and associated physical health problems which is responsible for most of their 7-25 years reduced life expectancy (Campion, 2019). People with mental disorder are therefore likely to be at higher risk of COVID-19 and associated mortality. People with mental disorder being cared for in psychiatric hospitals are also at further increased risk of COVID-19 due to sharing common dining and bathroom space, participation in groups activities and reduced ability to practice physical distancing and other infection control measures (Xiang et al, 2020b).

Disability

People are defined as disabled if daily activities are 'limited a little' or 'limited a lot' by a health problem or disability (see also section 4.8). Compared to people without disability, COVID-19 mortality rates for people who were 'limited a lot' were 2.4 higher for women and 1.9 higher for men in England and Wales after adjusting for region, population density, socio-demographic and household characteristics (ONS, 2020e).

Smoking

Smoking is responsible for 11.5% of deaths globally (GBD, 2017) and is associated with worse outcomes for COVID-19 which is particularly relevant for people with mental disorder who smoke at much higher rates (McManus et al, 2010):

- Negative progression and adverse outcomes of COVID-19 (systematic review) (Vardavas & Nikitara, 2020).
- Risk factor for COVID-19 progression (meta-analysis) (Patanavanich & Glantz, 2020).
- Doubled risk of severe COVID-19 (meta-analysis) (Zhao et al, 2020).
- Current smokers had 38.5% higher COVID-19 mortality and were 1.45 times more likely to have severe complications compared to former and never smokers (systematic review and meta-analysis) (Alqahtani et al, 2020).

Occupational

Health care workers (HCWs) appear to be at higher risk

- On 8/4/20, 22,073 cases of COVID-19 among HCWs from 52 countries had been reported to WHO (WHO, 2020c) while by 6/5/20, more than 90,000 HCWs had been infected (ICN, 2020).
- Proportion of infection among HCWs was 3.8% in China but 63% in Wuhan (CCDC, 2020; Wu & McGoogan, 2020) and 11% in Italy (ISDS, 2020).
- Proportion of people working in patient-facing healthcare or resident-facing social care roles in England who tested positive for COVID-19 was 1.92% compared to 0.34% not working in such roles (ONS, 2020a).
- COVID-19 death rates for people working in social care including care workers and home carers in England and Wales were almost three times higher in men and two times higher in women compared to the general population (ONS, 2020f).

- However, COVID-19 death rates for healthcare workers in England and Wales including doctors and nurses were not higher compared to the same age and sex in the general population (ONS, 2020f).

Analysis of data from England and Wales found that rate of death involving COVID-19 compared with the rate among people of the same sex and age per 100,000 population was 21.4 for men working in the lowest skilled occupations compared to 5.6 for men in professional occupation, 19.8 for sales and retail assistants, 26.4 for bus and coach drivers, 35.9 for chefs, 36.4 for taxi drivers and chauffeurs and 45.7 for men working as security guards (ONS, 2020f).

Place of work

In England, working from home was associated with three-fold lower rates of COVID-19 infection (0.22%) compared to working both at home and outside the home (0.63%) and working outside the home (0.70%) (ONS, 2020a).

Care homes

Care homes had particularly high mortality rates ranging from 24% to 82% (Comas-Herrera et al, 2020). A study of 9,081 care homes across England which included 293,301 residents and 441,498 staff found that 56% of care homes reported at least one case of coronavirus, 20% of residents tested positive for COVID-19 and 7% of staff tested positive for COVID-19 (ONS, 2020i). Factors associated with higher risk of infection included use of agency nurses or carers. In England and Wales, 29.7% of deaths involving COVID-19 occurred in care homes (ONS, 2020g) and there were 29,393 more deaths of care home residents from 28/12/19 to 12/6/20 compared to the same period the previous year of which 19,394 mentioned COVID-19 (ONS, 2020h).

3.3 Mortality

Mortality was 0.25%-3.0% and higher for countries with more limited access to hospital and intensive care (Wilson et al, 2020). Overall mortality in a study of 44,500 confirmed cases in China was 2.3% (Wu & McGoogan, 2020) although mortality in China was lower (1.4%) after adjustment for demography and under-ascertainment (Verity et al, 2020). However, other evidence suggests higher COVID-19 mortality rates:

- Meta-analysis found mortality of 4.3% (Sun et al, 2020).
- Analysis found that mortality rates were 5.6% in China, 15.2% outside China and even higher if a longer delay between onset of illness and death was considered (Baud et al, 2020).
- Systematic review and meta-analysis found mortality of 13.9% for hospitalised patients (Rodriguez-Morales et al, 2020).

The majority of deaths in China occurred in the elderly or those with underlying medical conditions (Zhou et al, 2020) while in England and Wales, 29.7% of deaths involving COVID-19 occurred in care homes (ONS, 2020g).

4. MENTAL IMPACTS OF COVID-19

Mental impacts of COVID-19 is covered in the following sections

- 4.1 Background: Impacts of mental disorder and wellbeing
- 4.2 COVID-19 impact on mental risk and protective factors
- 4.3 Mental impacts of pandemics on the general population
- 4.4 Mental impacts of COVID-19 on people with mental disorder
- 4.5 Mental impacts of pandemics on health professionals
- 4.6 Mental impacts of quarantine and social isolation
- 4.7 Mental impacts of COVID-19 infection
- 4.8 Higher risk groups

4.1 Background: Impacts of mental disorder and wellbeing

In 2016, mental disorder accounted for at least 20% of global disease burden (WHO, 2018a) although even this underestimates true impact by more than a third (Vigo et al, 2016). The annual global economic cost of mental disorder was US\$2,493 billion in 2010 which is projected to increase to US\$6,046 billion by 2030 (Bloom et al, 2011).

Such a large impact occurs for several reasons (Campion, 2019):

- Mental disorder is common affecting a large proportion of the world's population each year (Kessler et al, 2009; Polanczyk et al, 2015).
- Most lifetime mental disorder arises before adulthood and then often reoccurs across the life course (Jones, 2013).
- Mental disorder results in broad impacts: Health impacts include increased health risk behaviours (smoking, alcohol use, drug use, physical inactivity, self-harm), associated higher rates of physical illness which result in the majority of 7-25 years reduced life expectancy, and suicide. Broader impacts include poorer educational and employment outcomes, social exclusion, crime and violence.
- Low coverage of evidence-based interventions to treat mental disorder, prevent associated impacts and prevent mental disorder from arising (see section 8).

Mental wellbeing also results in broad impacts including (Campion, 2019):

- Reduced rates of mental disorder in childhood and adolescence, suicide, health risk behaviours, heart disease and mortality.
- Improved recovery from physical illness and longer life expectancy.
- Improved education and employment outcomes.
- Better social relationships and resilience.

4.2 COVID-19 impact on mental risk and protective factors

Various factors increase risk of mental disorder and poor wellbeing while other factors promote mental wellbeing (Campion, 2019).

Risk factors for mental disorder include the following (Campion, 2019).

- During pregnancy: Tobacco/alcohol/cannabis use, prematurity, prenatal infection, low birth weight, parental mental illness and poor maternal diet.
- During childhood and adolescence: Genetic, demographic, familial, inequality, socioeconomic, parental, child adversity, physical illness including from COVID-19, health risk behaviour (including tobacco/alcohol/drug use, physical inactivity, dietary and screen time), insomnia and social. Child adversity is particularly important accounting for a third of adult mental disorder (Kessler et al, 2010).
- During adulthood: Genetic, demographic, socioeconomic, mental (childhood mental disorder, sub-threshold mental disorder, poor mental wellbeing), physical illness, health risk behaviours, obesity and dietary, insomnia, employment related and unemployment, social, violence, housing and environmental (including pandemics, pollution, flooding and climatic).

In the general population, impacts of COVID-19 amplify the following risk factors for mental disorder (Campion, 2019) and therefore, COVID-19 would be expected to increase prevalence of mental disorder and suicide:

- Socioeconomic
 - Inequality: In England, impact of COVID-19 was proportionally higher on those living in the most deprived neighbourhoods (ONS, 2020d). Men working in the lowest skilled occupations had four-fold higher rate of death involving COVID-19 compared to men in professional occupation (ONS, 2020f). COVID-19 is likely to result in larger impacts in LMICs due to lack of resources and more difficulty practising physical distancing.
 - Poverty: Under the most extreme scenario of 20% income or consumption contraction, people living in poverty could increase by 420-580 million (Sumner et al, 2020) using World Bank poverty measures of \$1.90 a day although this is likely to be even greater if applying the relative measure of less than 60% of median income.
 - Unemployment: COVID-19 has been estimated to threaten the employment of 1.25 billion workers globally who are at risk of falling in poverty particularly in LMICs (ILO, 2020) where they are less likely to receive unemployment benefit.
 - Workplace closure: A total of 81% of the global workforce (2.7 billion workers) have had their workplace fully or partly closed (ILO, 2020).
 - Financial difficulty: Since the COVID-19 pandemic, proportion of adults in Great Britain who found it difficult or very difficult to pay usual household bills doubled from 5% to 11% (ONS, 2020j)
 - Debt (Jenkins et al, 2008; Richardson et al, 2013).
 - Recession (Frasquilho et al, 2016; Katikireddi et al, 2012) which is also associated with increased suicide (Campion, 2019).
- Food insecurity: Globally in 2019, 820 million were hungry today, 11% were undernourished, 26.4% (2 billion people) experienced moderate and severe levels of food insecurity and 8% of Northern America and Europe experienced moderate food insecurity (FAO, 2019). COVID-19 could nearly double the number of people in acute hunger to almost 250 million by the end of 2020 (WFP, 2020) with associated increased risk of mental disorder (Jones, 2017; Shankar et al, 2017).

- Child adversity: Child adversity accounts for 30% of adult mental disorder (Kessler et al, 2010). Globally, over half of all children aged 2–17 years (1 billion children globally) experienced emotional, physical or sexual violence in previous year (Hillis et al, 2016). COVID-19 is further increasing child maltreatment, gender-based violence and sexual exploitation because of lack of access to school friends, teachers, social workers and the safe space and services that schools provide (WHO, 2020d).
- Violence including against women and children (Peterman et al, 2020).
- Work related stress including for groups such as health professionals (see section 4.5).
- Social: Loss of social capital associated with COVID-19 will increase risk of mental disorder (Ehsan & De Dilva, 2015; McPherson et al, 2014; Santini et al, 2015). Social isolation (AMS, 2020) is also amplified by recommended physical distancing and quarantine (Brooks et al, 2020) (see below) which may disproportionately affect adolescent mental health (Orben et al, 2020). In Great Britain, 21% of adults said that lockdown had affected their relationships with spouses or partners causing the most concern (ONS, 2020k) with 21% continuing to experience strained personal relationships two months later after relaxation of lockdown (ONS, 2020j). Furthermore, of those home schooling, 25% of adults said it was putting a strain on their relationships in the household while 32% of adults thought the well-being of their child or children was being negatively affected.
- Physical illness including from COVID-19 (see section 4.7).
- Reduced access to healthcare for physical and mental health issues: Some community facilities may close to support physical distancing and support may be more limited to phone calls which may be insufficient for some. In Great Britain, a survey of 2023 people in May 2020 found that compared to people without disability, people with mental health impairment were less likely to seek professional health advice for a new or worsening health problem (31.9% vs 67.3%) and were more likely to feel that access to healthcare and treatment for non-COVID-19 issues was being affected (18.7% vs 42.4%) (ONS, 2020l)
- Physical inactivity: In 2016, prevalence of insufficient physical activity was 81.0% in 11-17 year olds (Guthold et al, 2020) and 27.5% in adults (Guthold et al, 2018). Furthermore, total sitting and TV viewing time was associated with increased risk for several major chronic disease outcomes and mortality independent of physical activity (Patterson et al, 2018). The COVID-19 pandemic has reduced many opportunities to be physically active and is likely to increase level of physical inactivity and sedentary behaviour with associated impacts on both physical and mental health.
- Other health risk behaviour including tobacco/alcohol/drug use, poor diet and excessive screen time.
- Insomnia: A survey of 2,254 UK adults found that 6 in 10 reported worse sleep since the lockdown was announced on 23/3/20 (Rosenzweig & Duffy, 2020) while systematic review and meta-analyses of the impact of COVID-19 on health care workers found 38% had insomnia (Pappa et al, 2020; Salazar de Pablo et al, 2020).

Protective factors for mental wellbeing include the following some of which will be impacted by COVID-19 and are more relevant to address during pandemics (Campion, 2019):

- Genetic
- Demographic
- Socioeconomic
- Parental
- Personality
- Childhood: Secure attachment, child wellbeing and social/emotional skills, educational and absence of bullying
- Social including social network size (Rafnsson et al, 2015), social support (Chu et al, 2010), social participation (Cooper et al, 2011) and social relationships (Patalay & Fitzsimons, 2016)
- General health and health behaviours (including not smoking, healthy diet and physical activity)
- Employment
- Living environment
- Leisure, culture and the arts
- Sleep
- Intentional activities and action for others
- Meaning, gratitude, autonomy, self-compassion, religion

4.3 Mental impacts of pandemics on the general population

Studies indicate that pandemics are associated with increased associated risk of mental disorder in the general population. This section is divided into the population mental health impact of:

- COVID-19
- Ebola
- Influenza
- Severe Acute Respiratory Syndrome (SARS)
- Swine-flu

COVID-19

- A systematic review and meta-analysis found COVID-19 was associated with prevalence for depression of 33% (95% CI 28-38) and for anxiety of 28% (95% CI 23-32) which was similar for healthcare workers and the general population (Luo et al, 2020). Prevalence of anxiety and depression was highest among those with pre-existing conditions (56%: 95% CI 39-73) and COVID-19 infection (55%: 95% CI 48-62). Studies from China, Italy, Turkey, Spain and Iran reported higher prevalence among healthcare workers and the general public. Risk factors included being female, nursing occupation, lower socioeconomic status, being at higher risk of contracting COVID-19 and social isolation. Protective factors included sufficient medical resources, up-to-date and accurate information and taking precautionary measures.
- A Chinese survey during the initial phase of the COVID-19 outbreak found that more than half of 1210 respondents rated the psychological impact as moderate-to-severe, and about one-third reported moderate-to-severe anxiety (Wang et al, 2020c). Female gender, student status, and specific physical symptoms were associated with a greater psychological impact of COVID-19 including higher levels of stress, anxiety and depression. Specific up-to-date and

accurate health information and precautionary measures (including hand washing and wearing a mask) were associated with a lower psychological impact of the outbreak and lower levels of stress, anxiety and depression.

- A Great Britain survey of 1,588 adults found that 85.8% were either very worried or somewhat worried that they or someone in their family would be infected by the coronavirus (COVID-19) (ONS, 2020m). This was higher for “at risk” groups including those aged over 69 years (91.7%) and those with underlying health conditions (90.4%).
- A Great Britain survey of 1,588 adults between 20/3/20 and 30/3/20 found 49.6% reported high anxiety compared to 21% at the end of 2019 which equated to 25 million adults (ONS, 2020n). Furthermore, between end of 2019 and March 2020, proportion reporting “low” happiness had increased from 8.4% to 20.7% while average happiness had fallen from 7.52 to 6.36. Other measures of wellbeing including life satisfaction and life being worthwhile had also reduced. People who experienced a reduction in household finances because of COVID-19 reported 16% higher anxiety while those who thought they would be unable to save money in the next year reported anxiety 33% higher compared with those who thought they could. A subsequent survey of adults in Great Britain during lockdown found that although anxiety and happiness had slightly improved, life satisfaction remained subdued and an estimated 12.5 million people had been affected financially (ONS, 2020o).
- A UK longitudinal survey involving 11,980 people found that during lockdown, proportion experiencing at least one mental health problem had increased by 10.8% with young people and women experiencing the greatest impact (Banks & Xu, 2020). Proportion experiencing at least one mental health problem ‘much more than usual’ increased from 10.2% to almost 23.7%. Groups with poor mental health before the pandemic experienced the largest deterioration in mental health.
- A UK nationally representative survey of 1,099 people about COVID-19 found concerns about isolation (21%), mental illness (20%), social distancing (13%), negative feelings (13%) and practical issues (finances/ employment) (10%) (AMS, 2020).
- A Vietnamese survey of 3,947 outpatients from nine hospitals and health centres found that people with suspected COVID-19 symptoms had increased risk of depression (OR 2.89) and lower health related quality of life (OR -7.92) (Nguyen et al, 2020).

Ebola

- Psychological distress including from family and community stigma and discrimination was common among Ebola outbreak survivors (systematic review) (James et al, 2019).
- Psychosocial impacts included guilt, stigma, blame, reduced quality of life and disruption of community interaction (WHO report) (Van Bortel et al, 2016).
- Fear-related behaviours increased risk of psychological distress and onset of new psychiatric disorders (Schultz et al, 2016).

Influenza

The 1918-19 influenza pandemic was associated with increased suicide in the USA (Wasserman, 1992).

Severe Acute Respiratory Syndrome (SARS)

- 22.9% of 415 community health care setting respondents had SARS-related psychiatric morbidity (Sim, 2010).
- A study of 90 SARS survivors found post-SARS cumulative incidence of DSM-IV psychiatric disorders was 58.9% with 33.3% prevalence for any psychiatric disorder at 30 months post-SARS (Mak et al, 2009).
- A telephone survey of 818 Hong Kong residents during the SARS epidemic found that over 60% stated they cared more about the family members' feelings, 30%-40% stated that they found their friends and their family members more supportive, and 35%-40% took more time to rest, relax or do exercise (Lau et al, 2006).

Swine-flu

During the swine-flu outbreak in the UK, 10-30% of general public were very or fairly worried about contracting the virus (Rubin et al, 2010).

Repeated media exposure to community crisis such as pandemics was associated with increased risk of anxiety (Garfin et al, 2019).

4.4 Mental impacts of COVID-19 on people with mental disorder

Since mental disorder results in a range of associated impacts (see section 4.1), people with mental disorder are at higher risk of both COVID and associated mental health impacts such as isolation which increases risk of relapse. The following groups with mental disorder are at even higher risk of COVID-19 adverse outcomes:

- People with long term physical health conditions including asthma, COPD, diabetes, HIV
- People older than 70 years
- Use of alcohol, drugs (EMCDDA, 2020) and tobacco (see section 3.2)
- Persistent psychotic symptoms which result in not self-isolating

Studies on mental health impacts of COVID-19 on people with existing mental disorder include:

- A UK survey of 2,198 people about COVID-19 with experience of mental illness and people with an interest in mental health found concerns about access to support and services (13%), anxiety about practical issues (12%), becoming mentally unwell (9%), family and relationships (9%) and isolation (16%) (AMS, 2020).
- A UK survey of 2,111 young people with mental health needs found that 51% felt that the COVID-19 pandemic had made their mental health a bit worse and 32% much worse (32%) (Young Minds, 2020). Helpful activities for mental health included face-to-face calls with friends (72%), watching TV/films (72%), exercise (60%), learning new skills (59%), reading books (55%), gaming (49%), face-to-face calls with family (47%) and spending time with family (48%), breathing techniques (38%), social media (31%) and reading/watching the news.
- A survey of 2023 people in people in Great Britain in May 2020 found that compared to those without disability, proportion of people with mental impairment (ONS, 2020):
 - Were more likely to be very worried about the effect COVID-19 was having on them (27.2% compared to 15.1%)
 - Had worse mental health in past week (69.2% vs 20.7%).

- Were more likely to feel that their wellbeing had been affected (42.2% vs 77.5%)
- Were more likely to feel that their relationships had been affected (40.3% vs 22.5%)
- Were more likely to report that their wellbeing had been affected by feeling lonely in the previous seven days (63.9% vs 29.3%)

4.5 Mental impacts of pandemics on health professionals

Mental impacts of pandemics on health professionals is divided into the following sections:

- Coronavirus including COVID-19, Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS)
- COVID-19
- Severe Acute Respiratory Syndrome (SARS)
- Viral epidemic outbreaks
- Disasters

Coronavirus including COVID-19, Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS)

- A systematic review and meta-analysis of the impact on health care workers of infection with or exposure to COVID-19, MERS and SARS found prevalence of depressive symptoms was 26.3%, anxiety features 29.0%, post-traumatic features 20.7%, psychological distress 37.8%, burnout 34.4%, general health concerns 62.5%, fear 43.7%, somatisation 16.1%, insomnia 37.9% and stigmatisation 14.0% (Salazar de Pablo et al, 2020).

COVID-19

- A systematic review and meta-analysis of the impact of COVID-19 on health care workers found prevalence of depression 22.8%, anxiety 23.2% and insomnia 38.9% (Pappa et al, 2020).
- A systematic review and meta-analysis found that COVID-19 was associated with prevalence for depression 33% (95% CI 28-38) and for anxiety 28% (95% CI 23-32) which was similar between healthcare workers and the general population (Luo et al, 2020). Prevalence of anxiety and depression was highest among those with pre-existing conditions (56%: 95% CI 39-73) and COVID-19 infection (55%: 95% CI 48-62). Studies from China, Italy, Turkey, Spain and Iran reported higher prevalence among healthcare workers and the general public. Risk factors included being female, nursing profession, lower socioeconomic status, being at higher risk of contracting COVID-19, and social isolation. Protective factors included sufficient medical resources, up-to-date and accurate information, and taking precautionary measures.
- A survey of 1257 Chinese nurses and doctors found that those engaged in direct diagnosis, treatment, and care of patients with COVID-19 were at higher risk of symptoms of depression (OR 1.52), anxiety (OR 1.57), insomnia (OR 2.97) and distress (OR 1.60) compared with those not engaged in such work (Lai et al, 2020a).
- A survey of 7,143 medical students in China found that 0.9% had severe anxiety, 2.7% moderate anxiety and 21.3% mild anxiety (Cao et al, 2020). Anxiety was associated with having relatives or acquaintances infected with COVID-19, economic effects, impacts on daily life and delays in academic activities.

Severe Acute Respiratory Syndrome (SARS)

- A systematic thematic review found that psychological impact of SARS on healthcare workers was associated with occupational role, training/ preparedness, high-risk work environments, quarantine, role-related stressors, perceived risk, social support, social rejection/isolation, and impact of SARS on personal or professional life (Brooks et al, 2018). To minimize the psychological impact of future outbreaks of infectious diseases, it recommended that healthcare workers were prepared for the potential psychological impact though employers encouraging a supportive environment in the workplace and ensuring that support was in place for those most at risk.
- A survey of 549 staff from a Chinese hospital after the 2003 SARS outbreak found that 10% of respondents had experienced high levels of post-traumatic stress (PTS) symptoms (Wu et al, 2009). Respondents who had been quarantined, or worked in high-risk locations such as SARS wards, or had friends or close relatives who contracted SARS, were 2-3 times more likely to have high PTS symptom levels than those without such exposures. Respondents' perceptions of SARS-related risks were significantly positively associated with PTS symptom levels and partially mediated the effects of exposure. Altruistic acceptance of work-related risks was negatively related to PTS levels.
- A survey of 549 hospital employees in Beijing China found the 2003 SARS outbreak was associated with increased risk of subsequent of PTSD and alcohol abuse/dependence (Wu et al, 2008).
- A survey of 1257 health workers in a Taiwanese tertiary hospital affected by SARS estimated prevalence of psychiatry morbidity of 75.3% (Chong et al, 2004). Psychiatric morbidity was 71.3% in the initial phase of the outbreak, (71.3%) and even higher in the 'repair' phase (80.6%). In the initial phase, feelings of extreme vulnerability, uncertainty and threat to life were experienced dominated by somatic and cognitive symptoms of anxiety. During the phase when the infection was being brought under control, depression and avoidance were evident.
- A cross-sectional survey of 193 physicians from three large teaching hospitals that provided care to SARS patients in Toronto found significantly higher psychological distress among physicians providing direct care to SARS patients (45.7%) compared to those not providing direct care (17.7%), and physicians providing direct care reported feeling more stigmatized (Grace et al, 2005).
- A survey of 10,511 healthcare workers from nine major healthcare institutions during the SARS epidemic in Singapore found significantly higher levels of anxiety with 56% reporting increased work stress and 53% reporting increased workload (Koh et al, 2005). Although 49% experienced social stigmatisation and 31% ostracism by family members, 77% felt appreciated by society.
- A survey of 2001 hospital staff in Canada during the 2003 SARS outbreak found two-thirds of the respondents reported SARS-related concern for their own or their family's health and 29% had probable emotional distress although this was 45% among nurses (Nickell et al, 2004). Factors which were significantly associated with increased levels of concern for personal or family health included perception of a greater risk of death from SARS (OR 5.0), living with children (OR 1.8), personal or family lifestyle affected by SARS outbreak (OR 3.3) and being treated differently by people because of working in a hospital (OR 1.6). Factors significantly associated with the presence of emotional distress included being a nurse (OR 2.8), part-time

employment status (OR 2.6), lifestyle affected by SARS outbreak (OR 2.2) and ability to do one's job affected by the precautionary measures (OR 2.9).

- Follow up of 769 healthcare workers in Canada who treated SARS patients found that they had significantly higher levels of burnout, psychological distress and post-traumatic stress 13-26 months after the outbreak (Maunder et al, 2006).

Viral epidemic outbreaks

- A rapid review and meta-analysis found that healthcare workers in contact with patients affected by novel virus outbreaks had increased acute or post-traumatic stress (OR 1.71: 95% CI 1.28-2.29) and psychological distress (OR 1.74: 95% CI 1.50-2.03) (Kisely et al, 2020). Risk factors for psychological distress included younger age, being more junior, being the parents of dependent children, having an infected family member, longer quarantine, lack of practical support and stigma. Clear communication, access to adequate personal protection, adequate rest, and both practical and psychological support were associated with reduced morbidity.
- A non-peer-reviewed rapid systematic review found that viral epidemic outbreaks resulted in higher levels of health care worker anxiety, depression, stress, burnout and PTSD although confidence intervals were wide (Ricci-Cabello et al, 2020). Risk factors included sociodemographic (younger age and female), social (lack of social support, social rejection, isolation, stigma), occupational (frontline staff, nurses) and lower levels of training, preparedness and job experience.

Disasters

- Impact of responders (Brooks et al, 2016): A systematic review found that psychological impact of disasters on responders was associated with pre-disaster factors (occupational factors; specialised training and preparedness; life events and health), during-disaster factors (exposure; duration on site and arrival time; emotional involvement; peri-traumatic distress/dissociation; role-related stressors; perceptions of safety, threat and risk; harm to self or close others; social support; professional support) and post-disaster factors (professional support; impact on life; life events; media; coping strategies). Steps that can be taken before, during and after a disaster can minimise risks to responders and enhance resilience. Preparedness (for the demands of the role and the potential psychological impact) and support (particularly from the organisation) are essential.
- Impact on employees (Brooks et al, 2017): A systematic review found that psychological impact of disasters on employees was associated with pre-disaster factors (experience/training; income; life events/health; job satisfaction), peri-disaster factors (exposure; peri-traumatic experiences; perceptions of safety; injury), social factors (organisational support; social support generally) and post-disaster factors (impact on life).

4.6 Mental impacts of quarantine and social isolation

- Quarantine: A rapid review highlighted negative psychological effects of quarantine including post-traumatic stress symptoms, confusion, and anger (Brooks et al, 2020). Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers suggested long-lasting effects. The review recommended that quarantine of individuals was for no

longer than required, provision of clear rationale for quarantine and information about protocols, and ensuring provision of sufficient supplies. Appeals to altruism by reminding the public about the benefits of quarantine to wider society can be favourable.

- Shielding: In England, 2.2 million people were identified as being vulnerable to severe impact from COVID-19 due to physical health conditions and advised to stay in their home or garden except for exercising once a day with no visitors except from a nurse, support or care worker. Since being advised to shield, 60% reported no change in their mental health, 29% reported slightly worse mental health, 7% reported much worse mental health and 3% much better (ONS, 2020p). However, 68% of those receiving mental health treatment reported worsening of their mental health (47% slightly worse, 21% much worse) with women more likely to experience worsening than men. Worsening in mental health was reported by 58% of people previously receiving treatment for their mental health.
- Social isolation
 - Lonelier young adults were more likely to experience mental health problems, to engage in physical health risk behaviours, and to use more negative strategies to cope with stress (British cohort study) (Matthews et al, 2019).
 - Rates of mental disorder were several times more common in single adult households compared to households with more than one adult/child (England national survey) (McManus et al, 2016).
 - Dementia: Social isolation increased risk of dementia (RR 1.6) (systematic review and meta-analysis) (Livingston et al, 2017).

4.7 Mental impacts of COVID-19 infection

- A meta-analysis and systematic review of psychiatric and neuropsychiatric effects of severe coronavirus infections found that during the acute illness, common mental health symptoms among patients admitted to hospital for SARS or MERS included depressed mood (32.6%: 95% CI 24.7-40.9) and anxiety (35.7%: 27.6-44.2) (Rogers et al, 2020). After the illness, prevalence of post-traumatic stress disorder (PTSD) was 32.2% (95% CI 23.7-42.0), depression 14.9% (12.1-18.2) and anxiety disorders 14.8% (11.1-19.4).
- A systematic review and meta-analysis found prevalence of 55% for anxiety and depression among those with COVID-19 infection (Luo et al, 2020).

4.8 Higher risk groups

Risk factors for mental disorder and poor mental wellbeing cluster in particular groups which results in higher rates of mental disorder and poor mental wellbeing in such groups (Campion, 2019). Examples of such groups include black and minority ethnic groups, carers, the homeless, LGBT, looked after children, offenders, refugees and the unemployed. These groups are also at higher risk of mental health impacts of COVID-19.

Apart from people with mental disorder, groups at higher risk of COVID associated mental health impacts include:

- Children, young people and families (school closures, domestic violence) (Holmes et al, 2020)
- Health professionals (see section 4.5)

- Populations which lack access to health services
- Particular ethnic groups (Platt & Warwick, 2020)
- Offenders (Burki, 2020)
- People infected with COVID-19 (Rogers et al, 2020) (see section 4.7)
- People with disability (see below)
- Refugees and camps
- Older people including people in care homes (Comas-Herrera et al, 2020)
- Carers

People with disability

A survey of 2023 people in people in Great Britain in May 2020 found that a higher proportion of disabled people than non-disabled people were worried about the effect of the coronavirus pandemic on their mental health and well-being (see table 1) as well as their access to health care and treatment for non-coronavirus-related issues (40.6% compared with 21.2%), their access to medication, groceries and essentials (44.9% compared with 21.9%), their health (20.2% compared with 7.3%) and feeling lonely in the last seven days (48.7% compared with 29.4%) (ONS, 2020).

Table 1. Impacts of COVID-19 on people with different types of disability in Great Britain (ONS, 2020)

Disability status	Proportion whose wellbeing was being affected (for example, boredom, loneliness, anxiety, stress) (95% confidence intervals)	Proportion who were very worried about effect that COVID is having on life right now (95% confidence intervals)	Proportion who were somewhat worried or very worried about COVID-19 whose mental health was worse in past week (95% confidence intervals)
Non-disabled	42.2% (38.3-46.1)	15.1% (12.4-17.8)	20.5% (14.9-26.2)
Disabled	53.2% (47.3-59.2)	25.9% (20.8-31.0)	39.7% (33.1-48.1)
Mental health impairment	77.5% (69.3-85.7)	27.2% (18.0-36.3)	65.2% (52.6-77.9)
Memory impairment	63.9% (51.3-76.5)	32.8% (20.9-44.7)	58.1% (41.9-74.3)
Mobility impairment	50.0% (42.5-57.5)	32.4% (25.4-39.4)	33.9% (22.8-45.0)
Hearing impairment	39.8% (27.0-52.5)	28.5% (16.3-40.8)	21.8% (3.0-40.5)
Visual impairment	56.1% (37.6-74.6)	21.2% (7.6-34.8)	37.6% (10.7-64.5)
Learning impairment	59.4% (46.0-72.8)	21.1% (10.4-31.8)	66.6% (48.4-84.8)
Dexterity impairment	49.1% (38.0-60.2)	26.1% (17.4-34.8)	32.0% (17.1-47.0)
Stamina	53.1% (44.6-61.6)	28.3% (20.5-36.0)	39.9% (27.6-52.2)

5. PREVENTION OF COVID-19 INFECTION

Prevention of COVID-19 infection is covered in the following sections:

- 5.1 Universal actions
- 5.2 Non-pharmaceutical interventions
- 5.3 Face masks to prevent infection
- 5.4 Actions for schools, workplaces, transport and PPE in the community
- 5.5 Priority actions
- 5.6 Vaccination
- 5.7 Lessons from countries which have addressed COVID-19
- 5.8 Prevention of further waves of COVID-19 infection

5.1 Universal actions

Actions recommended to prevent COVID-19 infection in all situations include (WHO, 2020a):

- Hand hygiene
- Respiratory etiquette
- Masks for symptomatic individuals
- Isolation and treatment of ill individuals
- Monitoring symptoms of healthy contacts.
- Traveller health advice
- Environmental cleaning: Human coronaviruses can be efficiently inactivated by surface disinfection procedures with 62–71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite within one minute (Kampf et al, 2020). Other biocidal agents such as 0.05–0.2% benzalkonium chloride or 0.02% chlorhexidine digluconate are less effective.

5.2 Non-pharmaceutical interventions

- Early, sustained, and layered application of non-pharmaceutical interventions (NPIs) (most commonly school closures and public gathering bans) strongly mitigated the consequences of the 1918–1919 influenza pandemic in the United States (Markel et al, 2007). However, although cities in which multiple NPIs were implemented at an early phase of the 1918 epidemic had peak death rates about 50% lower than those that did not, viral spread renewed on relaxation of NPIs (Hatchett et al, 2007).
- Non-pharmaceutical intervention in China, South Korea, Italy, Iran, France and the United States prevented or delayed an estimated 62 million confirmed cases corresponding to averting 530 million infections (Hsiang et al, 2020). The size of impact reflected the timing, intensity, extent and duration of policy deployment.
- Non-pharmaceutical interventions limited COVID-19 infection to 3.2–4.0% of the population of 11 European countries but continued intervention is needed to be considered to prevent further infection (modelling study) (Flaxman et al, 2020).
- Evaluation of non-pharmaceutical interventions for containing COVID-19 in China found that early detection and isolation of cases was estimated to prevent more infections than travel restriction and contact reduction but integrated interventions achieved the strongest and most rapid response (Lai et al, 2020b).

- Isolating ill people, contact tracing and quarantining exposed people were effective in reducing transmission of pandemic influenza (systematic review) (Fong et al, 2020). In most scenarios, a modelling study indicated that highly effective contact tracing and case isolation is enough to control a new outbreak of COVID-19 within 3 months (Hellewell et al, 2020). However, another modelling study using data from more than 40,000 people found that in a scenario of more than 1000 new symptomatic cases a day, a high proportion of cases would need to self-isolate and a high proportion of their contacts would need to be successfully traced to ensure a reproduction number less than one in the absence of other measures (Kucharski et al, 2020). If combined with social distancing measures, self-isolation and contact tracing would be more effective.
- Quarantine reduced incidence and mortality during COVID-19 pandemic although early implementation of quarantine and combining quarantine with other public health measures including school closure, travel restriction and social distancing is important to ensure effectiveness (rapid review) (Nussbaumer-Streit et al, 2020).
- Effectiveness of a single non-pharmaceutical measure is limited so a combination of interventions is required to have a substantial impact on transmission which include (Ferguson et al, 2020):
 - Mitigation which focuses on slowing but not necessarily stopping epidemic spread: Optimal mitigation policies (combining home isolation of suspect cases, home quarantine of those living in the same household as suspect cases, and social distancing of the elderly and others at most risk of severe disease) might reduce peak healthcare demand by two thirds and deaths by half. However, the resulting mitigated epidemic would still likely result in hundreds of thousands of deaths and health systems being overwhelmed many times over
 - Suppression which reverses epidemic growth, reduces case numbers to low levels and maintains this situation: Suppression minimally requires a combination of social distancing of the entire population, home isolation of cases and household quarantine of their family members. This may need to be supplemented by school and university closures although such closures may have negative impacts on health systems due to increased absenteeism.
The major challenge of suppression is that this type of intensive intervention package needs to be maintained until a vaccine becomes available (potentially 18 months or more) given that transmission will quickly rebound if interventions are relaxed
However, this paper did not incorporate the impact of extensive testing and contact tracing.
- In low- and middle-income countries, mitigation strategies which slow but do not interrupt transmission are still likely to rapidly overwhelm health systems resulting in substantial excess deaths while suppression needs to be maintained or triggered more frequently (Walker et al, 2020).

5.3 Face masks to prevent infection

- A meta-analysis and systematic review found that use of face masks could result in large reduction in risk of COVID-19 infection with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar (Chu et al, 2020).

- A meta-analysis of six RCTs found that there was no difference in risk of contracting influenza between use of N95 respirators and surgical masks (Long et al, 2020).
- A meta-analysis and systematic review found that face masks were effective to prevent SARS infection in health care workers (Offeddu et al, 2017).
- A review recommended use of face masks by the general population during the COVID-19 pandemic (Greenhalgh et al, 2020).
- On 5/6/20, WHO advised the use of face masks for the general public where physical distancing is not possible such as on public transport, shops, social gatherings and refugee camps (WHO, 2020e). It also advised that where physical distancing was not possible, medical masks should be worn by vulnerable population including those over 60 and with underlying health conditions.

5.4 Actions for schools, workplaces and transport

WHO recommended consideration of the following based on local/global evaluation (WHO, 2020f):

- School closures, workplace measures/closures, and avoiding crowding were effective in reducing transmission of pandemic influenza with voluntary home isolation a more feasible social distancing measure and more drastic social distancing measures reserved for severe pandemics (systematic review) (Fong et al, 2020).
- Physical distancing: A systematic review and meta-analysis found that transmission of viruses was 82% lower with physical distancing of 1m compared with less than 1m and that each additional 1m of separation more than doubled relative protection with data available up to 3m (Chu et al, 2020). However, physical distancing is more difficult in many LMICs.
- Public transport closures: Limited evidence found that international travel-related interventions had limited effectiveness in controlling pandemic influenza (systematic review) (Ryu et al, 2020).

5.5 Priority actions

Actions recommended by WHO by priority are as follows (WHO, 2020f)

- Highest priority
 - Enhance whole-of-society coordination mechanisms to support preparedness and response, including the health, transport, travel, trade, finance, security and other sectors. Involve public health Emergency Operations Centres and other emergency response systems early.
 - Sensitize the public to their active role in the response.
 - Engage with key partners to develop national and sub-national preparedness and response plans. Build on existing plans such as influenza pandemic preparedness plan.
 - Enhance hospital and community preparedness plans; ensure that space, staffing, and supplies are adequate for a surge in patient care needs.
- Secondary priority
 - Establish metrics and monitoring evaluation systems to assess effectiveness of measures.
 - Document lessons learned to inform on-going and future preparedness and responses.

- Prepare for regulatory approval, market authorization and post-market surveillance of COVID-19 products (e.g. laboratory diagnostics, therapeutics, vaccines), when available.

WHO's Strategic and Technical Advisory Group for Infection Hazards (STAG-IH) recommended (Heymann et al, 2020):

- Close monitoring is needed of changes in epidemiology and of the effectiveness of public health strategies and their social acceptance.
- Continued evolution of enhanced communication strategies that provide general populations and vulnerable populations most at risk with actionable information for self-protection, including identification of symptoms, and clear guidance for treatment seeking.
- Continued intensive source control: Isolation of patients and people testing positive for COVID-19, contact tracing and health monitoring, strict health facility infection prevention and control, and use of other active public health control interventions with continued active surveillance and containment activities at all other sites where outbreaks are occurring.
- Continued containment activities around sites where there are infected people and transmission among contacts, with intensive study to provide information on transmissibility, means of transmission, and natural history of infection, with regular reporting to WHO and sharing of data.
- Intensified active surveillance is needed for possible infections in all countries using the WHO recommended surveillance case definition (WHO, 2020g).
- Preparation for resilience of health systems in all countries is needed, as is done at the time of seasonal influenza, anticipating severe infections and course of disease in older people and other populations identified to be at risk of severe disease.
- If widespread community transmission is established, there should then be consideration of a transition to include mitigation activities, especially if contact tracing becomes ineffective or overwhelming and an inefficient use of resources. However, digital contact tracing could offer an important opportunity (Ferretti et al, 2020). Examples of mitigation activities include cancelling public gatherings, school closure, remote working, home isolation, observation of the health of symptomatic individuals supported by telephone or online health consultation, and provision of essential life support such as oxygen supplies, mechanical ventilators and extracorporeal membrane oxygenation (ECMO) equipment.
- Serological tests need to be developed that can estimate current and previous infections in general populations.
- Continued research is important to understand the source of the outbreak by study of animals and animal handlers in markets to provide evidence necessary for prevention of future coronavirus outbreaks.

5.6 Vaccination

COVID-19 vaccination

Work is underway to develop a COVID-19 vaccine with ten vaccines in clinical trials although many experts advise that a vaccine will take at least 18 months to develop (Mullard, 2020).

Pneumococcal vaccination

- Bacterial co/secondary infection further increases morbidity and mortality of influenza infection with *streptococcus pneumoniae*, *haemophilus influenzae* and *staphylococcus aureus* the most common causes (review) (Morris et al, 2018). Secondary bacterial pneumonia was associated with increased mortality in the 2009 H1N1 flu pandemic and occurred in 23% of cases with streptococcus pneumoniae the most common (systematic review) (MacIntyre et al, 2018).
- Pneumococcal vaccine PPV23 reduced fatality of the 1918 influenza pandemic by 40% and prevented 37% of associated pneumonia (meta-analysis) (Chien et al, 2010). Pneumococcal polysaccharide vaccines (PPV) prevented invasive pneumococcal disease (meta-analysis and systematic review) (Moberley et al, 2013). A study of more than 27,000 adults aged over 60 years in Spain found that pneumococcal vaccine PPV23 reduced risk of community acquired pneumonia (HR 0.49) (Ochoa-Gondar et al, 2018).
- Optimizing vaccination coverage in adults to mitigate the effects of community acquired pneumonia in the face of COVID-19 may be a second vaccination strategy including for LMICs to reduce COVID-19's impact on their health systems (Mendelson et al, 2020).
- Proportion of COVID-19 morbidity and mortality prevented by influenza vaccine and PPV23 is probably small although could be considerable (systematic review) (Thindwa et al, 2020).
- Where already in routine use among older and at-risk adults, maintaining high coverage of vaccination for both seasonal influenza and PPV23 could reduce both targeted disease and a proportion of COVID-19 morbidity and mortality if vaccination can be delivered while minimising risk of COVID-19 transmission (systematic review) (Thindwa et al, 2020). However, for countries without existing vaccination programmes for older adults, there was little evidence that implementation of these vaccinations during the COVID-19 pandemic would reduce COVID-19 mortality.

In the UK, pneumococcal vaccination is recommended for babies, people with underlying health conditions, people at occupational risk and people aged 65 and over. In the UK, coverage of PPV for over 64 year olds was 69.5% (PHE, 2018). Some US guidelines recommend vaccination of at-risk individuals with pneumococcal polysaccharide vaccine (PPSV23) every 5-10 years due to waning of antibody response over this time period (Musher et al, 2010).

5.7 Lessons from countries which have addressed COVID-19

Pandemic preparedness was assessed in 2019 and varied by country (GHSI, 2019). Large variation between countries exists for percentage of excess deaths, excess death rate and COVID-19 death rate (Islam, 2020).

Key actions include early implementation of testing widely, isolation/quarantine of infected people and contacts, and physical distancing. Hong Kong, Taiwan and Singapore were possibly more able to effectively respond to COVID-19 as a result of lessons learnt from SARS in 2003 and MERS in 2015

- Singapore was one of the worst affected countries during the 2003 SARS outbreak and had set up a Multi-Ministry Task Force before its first COVID-19 case: Singapore implemented an early multipronged surveillance and containment strategy. Rapid identification and isolation of cases, quarantine of close contacts, and active monitoring of other contacts have been

effective in suppressing expansion of the outbreak (Ng et al, 2020). Other measures include order control measures, public education and updates, workplace measures, and daily temperature for all frontline health care workers who would be quarantined if having had unprotected exposure (Lin et al, 2020; Lee et al, 2020a).

- South Korea has significantly slowed number of new cases without such a strict lockdown policy by widely testing for the virus, isolating cases and quarantining suspected cases.
- Taiwan took early action including coordinated effective case identification, quarantine of suspicious cases and proactive case finding (Wang et al, 2020d; Cheng et al, 2020).
- New Zealand took swift early action and managed to eliminate COVID-19 (Cousins, 2020).
- Germany: Number of deaths were far lower compared to neighbouring countries which has been partly attributed to early and high level of testing among a wide sample of the population as well as early closure of schools and most retail businesses, banning gatherings of people and mandating isolation of people with COVID-19 or who were exposed to it (Stafford, 2020).

5.8 Prevention of further waves of COVID-19 infection

- The 1918-1919 influenza pandemic resulted in between 50 million and 100 million deaths (Taubenberger & Morens, 2006). It began as a first wave in March 1918 and spread across the United States, Europe and Asia over the next six months with high prevalence but low mortality. A second wave spread globally from September 2018 to November 2018 and had high mortality rates. A third wave occurred in early 1919 in many countries which also resulted in high mortality rates.
- Several countries experienced increased rates of COVID-19 infection following relaxation of non-pharmaceutical interventions. For instance, on 25/6/20 WHO announced that the previous week, Europe had seen a rise in weekly cases of COVID-10 for the first time in months with eleven countries experiencing significant resurgence that if left unchecked would push health systems to the limit.
- Non-pharmaceutical interventions limited COVID-19 infection to 3.2-4.0% of the population of 11 European countries but continued intervention was required to prevent further infection (modelling study) (Flaxman et al, 2020).
- Rapid epidemic rebound following relaxation of 'lockdown' measures is likely in the absence of 'herd immunity' and as long as COVID-19 continues to circulate within a country (Ferguson et al, 2020; Kissler et al, 2020). The overall determining factor for rebound size is effectiveness of physical distancing measures which remain in place (Marais and Sorrell, 2020).
- A UK modelling study estimated that increased levels of testing of people (between 25% and 72% of symptomatic people tested at some point during active COVID-19 infection) and effective contact-tracing and isolation for infected individuals would prevent an epidemic rebound across all reopening scenarios (Panovska-Griffiths et al, 2020). However, if UK schools reopened in phases from June 2020, prevention of a second wave would require testing 51% of symptomatic infections, tracing of 40% of their contacts, and isolation of symptomatic and diagnosed cases. Without such measures, reopening of schools together with gradual relaxing of the lockdown measures would be likely to induce a secondary pandemic wave as were other scenarios for reopening.

6. TREATMENT OF COVID-19 INFECTION

Treatment of COVID-19 infection is covered in the following sections

- 6.1 Home treatment
- 6.2 Hospital treatment
- 6.3 Pharmacotherapy

If a person has a fever with cough or breathlessness and might have been exposed to COVID-19, it is recommended they call their doctor or nurse for advice and not go the hospital on their own to prevent transmission to others

6.1 Home treatment for COVID-19

- Home treatment is appropriate for those with non-severe infection (fever, cough, myalgia without dyspnoea) (WHO, 2020h; WHO, 2020i). Management includes hydration, antipyretics and analgesics and monitoring for clinical deterioration which may prompt hospitalisation. In patients with risk factors for more severe illness, there should be low threshold for clinical evaluation and admission.
- Affected people should be placed in a well-ventilated single room, household members should stay in a different room or, if that is not possible, maintain a distance of at least 1 m from the ill person and perform hand hygiene (washing of hands with soap and water) after any type of contact with patients or their immediate environment.
- When washing hands, it is preferable to use disposable paper towels to dry them. If these are not available, clean cloth towels should be used and replaced when they become wet.
- To contain respiratory secretions, a medical mask should be provided to the patient and worn as much as possible. Individuals who cannot tolerate a medical mask should use rigorous respiratory hygiene – that is, the mouth and nose should be covered with a disposable paper tissue when coughing or sneezing.
- Caregivers should also wear a tightly fitted medical mask that covers their mouth and nose when in the same room or vehicle as the patient.
- Contact tracing is important which can occur digitally (Ferretti et al, 2020).

Patients may discontinue home isolation when (CDC, 2020a)

- At least seven days have passed since symptoms first appeared and
- At least three days (72 hours) have passed since recovery of symptoms (defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms).

6.2 Hospital treatment for COVID-19

- Management includes infection control and supportive care. More severe cases may require oxygen and ventilation.
- Since severity of disease is closely related to prognosis, early detection of high risk and critically ill patients is important (Huang et al, 2020c).

- It is essential though that cases are recognized and isolated for two weeks, and other people that had been in contact with them also identified to prevent spread.

6.3 Pharmacotherapy for COVID-19

Options to control or prevent emerging infections of COVID-19 include vaccines, monoclonal antibodies, oligonucleotide-based therapies, peptides, interferon therapies and small-molecule drugs. However, new interventions are likely to require months to years to develop.

Given the urgency of the 2019-nCoV outbreak, there is potential to repurpose existing antiviral agents approved or in development for treating infections caused by HIV, hepatitis B virus (HBV), hepatitis C virus (HCV) and influenza, based on therapeutic experience with two other infections caused by human coronaviruses which are severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) (Li & De Clercq, 2020).

WHO is evaluating the impacts focusing of the four most promising therapies which include remdesivir (antiviral), chloroquine and hydroxychloroquine (malaria medications), a combination of two HIV drugs lopinavir and ritonavir, and a combination of the antivirals lopinavir, ritonavir and interferon-beta (Kupferschmidt & Cohen, 2020). Recent studies include:

- Dexamethasone: The RECOVERY (Randomised Evaluation of COVid-19 thERapY) trial found that dexamethasone reduced deaths by one third in ventilated patients (RR 0.65: 95% CI 0.48-0.88) and by one fifth in patients requiring oxygen (RR 0.80: 95% CI 0.67-0.96) with no benefit in patients not requiring respiratory support (Horby et al, 2020).
- Remdesivir
 - Compassionate use of remdesivir for 53 patients hospitalised with severe COVID-19 which resulted in improvement in clinical improvement in 36 patients (68%) although interpretation was limited by several study design issues (Grein et al, 2020).
 - A randomised, double-blind, placebo-controlled, multicentre trial of remdesivir in 237 adults with severe COVID-19 found no statistically significant benefits (Wang et al, 2020e).
 - A preliminary report found of a double-blind randomized trial of 1,063 patients found that those who received remdesivir had a 32% faster time to recovery and reduced mortality (7.1% compared to 11.9%) than those who received placebo (Beigel et al, 2020). This resulted the FDA to authorise the emergency use of remdesivir.
- Chloroquine
 - A small study found that hydroxychloroquine treatment was significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect was reinforced by azithromycin (Gautret et al, 2020).
 - After high-risk or moderate-risk exposure to Covid-19, a randomised, double-blind, placebo-controlled trial of 821 people found hydroxychloroquine did not prevent illness compatible with Covid-19 or confirmed infection when used as postexposure prophylaxis within 4 days after exposure (Boulware et al, 2020).
 - Chief investigators of the RECOVERY (Randomised Evaluation of COVid-19 thERapY) trial concluded that there was no beneficial effect of hydroxychloroquine in patients hospitalised with COVID-19 after comparing 1542 patients randomised to

hydroxychloroquine with 3312 patients randomised to usual care (Recovery, 2020). This resulted in WHO and others stopping research into hydroxychloroquine as treatment of COVID-19.

- Lopinavir–ritonavir: This resulted in no benefit in a randomised trial of 199 hospitalized adult patients with severe Covid-19 (Cao et al, 2020).
- Convalescent plasma therapy: Initial findings are encouraging but have so far only come from two small studies done in China; a case series of five patients with critical COVID-19 receiving mechanical ventilation, and a pilot study done in ten patients with severe COVID-19.

Reviews highlighted no evidence for vitamin D deficiency predisposing to COVID-19 or for vitamin D supplementation for prevention/ treatment of COVID-19 (Lee et al, 2020b; PHE, 2020).

7. PUBLIC MENTAL HEALTH INTERVENTIONS

Public mental health interventions include mental disorder prevention, mental wellbeing promotion and resilience promotion (Campion, 2019; Campion et al, 2020b) and are particularly important during times of crisis such as pandemics.

Mental disorder prevention

- Primary level: Addresses risk factors to prevent mental disorder from arising.
- Secondary level: Early intervention for mental disorder and associated impacts as soon as they arise.
- Tertiary level: Treatment to prevent relapse and action to both address and prevent associated impacts.

Mental wellbeing promotion

- Primary level: Promotion of protective factors for mental wellbeing.
- Secondary level: Early promotion in those with recent deterioration in mental wellbeing.
- Tertiary level: Promotion in those with existing and or longstanding poor mental wellbeing.

Resilience promotion

- Resilience involves negotiating, managing and adapting to stress or trauma.
- Promotion of resilience protects against mental disorder, poor mental wellbeing and associated impacts.

Many PMH interventions are also cost effective (Campion, 2019/ Tables 9 and 10). Many other effective PMH interventions have not had cost-benefit evaluation although are likely to be cost effective.

Public mental health intervention delivery occurs at individual, community and national levels and across different stages of the life course. More targeted approaches are required for higher risk groups to prevent further widening of inequalities (Campion, 2019). Different interventions are provided by different organisations including primary care, secondary mental health care, local government/ public health, social care, voluntary sector, schools, employers, housing, criminal justice and others. Coordination between these different organisations is required.

PUBLIC MENTAL HEALTH INTERVENTIONS TO ADDRESS COVID-19

Public mental health interventions outlined above are also important during pandemics such as COVID-19 which increases risk of mental disorder and poor mental wellbeing. Such interventions need to be targeted at groups at higher risk of both COVID-19, mental disorder and poor mental wellbeing. The following sections outlines PMH interventions particularly relevant for COVID-19:

- 7.1 Primary prevention of mental disorder
- 7.2 Secondary prevention of mental disorder
- 7.3 Tertiary prevention of mental disorder
- 7.4 Prevention of COVID-19 in people with mental disorder
- 7.5 Promotion of mental wellbeing
- 7.6 Promotion of resilience

7.1 Primary prevention of mental disorder

This addresses risk factors to prevent mental disorder from arising (Campion, 2019):

- Early actions to address COVID-19 at population level given its impacts on mental health.
- Socioeconomic inequalities which underlie many other risk factors for mental disorder (Campion et al, 2013): Since COVID-19 amplifies the impact of inequalities, national strategies to address inequalities are even more important (Marmot et al, 2010; Marmot et al, 2020) as well as interventions to address COVID-19 associated unemployment, debt, financial capability, fuel poverty and food insecurity. Large differences between countries in the impact of unemployment on suicide can be partly explained by differences in spend on active labour market and welfare programmes (Stuckler et al, 2011; Stuckler & Basu, 2013). During recession, predicted increases in suicide can be prevented by more generous unemployment protection (cross-sectional time-series data analysis from 30 countries) (Norström & Grönqvist, 2015).
- Parental interventions
 - Perinatal parental issues including smoking, alcohol use, drug use, low vitamin D, prenatal infection, prematurity, low birth weight, nutrition and breastfeeding support.
 - Parental mental disorder prevention and treatment: Treatment of parental mental disorder can prevent 40% of mental disorder in offspring (systematic review and meta-analysis) (Siegenthaler et al, 2012).
 - Parenting programmes which prevent child mental disorder, substance use, antisocial behaviour, unintentional injury, harsh parenting and improve child behaviour, parenting and parental mental health.
- Early intervention for child mental disorder which can prevent later adult mental disorder.
- Child adversity: Interventions to address child adversity include parenting interventions, parental education, home visiting programmes, school-based interventions to prevent violence/ bullying/sexual abuse, prevention of PTSD, safeguarding, community violence prevention, prevention of alcohol misuse (NICE, 2010) and addressing domestic violence (NICE, 2017). WHO recommended seven strategies for reducing violence against children which included implementation and enforcement of laws, norms and values, safe environments, parental and caregiver support, income and economic strengthening, response and support services, and education and skills (WHO, 2016).

- Violence prevention through addressing insecure attachment, family and school-based programmes, psychosocial interventions, CBT, prevention of alcohol misuse (NICE, 2010), addressing domestic violence (NICE, 2014; Karakurt et al, 2019) as well as prevention of gender-based violence (Kirk et al, 2017) and elder abuse.
- School-based and educational interventions including early child education programmes, academic support, social emotional learning programmes and psychosocial interventions
- Social isolation including through use of technology (Bessaha et al, 2019; Shah et al, 2019).
- Work related mental disorder and stress (Tan et al, 2014; Ruotsalainen et al, 2015) including targeted online stress management and mindfulness (Stratton et al, 2017), workplace-based mindfulness programmes (Janssen et al, 2018; Lomas et al, 2017), physical activity programmes (Jirathananuwat & Pongpirul, 2017), protective labour and social policies (Lunau et al, 2013) and procedural justice in the workplace (Ndjaboue et al, 2012). For health professionals:
 - A rapid review and meta-analysis found that clear communication, access to adequate personal protection, adequate rest, and both practical and psychological support were associated with reduced morbidity in healthcare workers who were in contact with COVID-19 affected patients (Kisely et al, 2020).
 - A systematic review found that health professionals could be supported and prepared for both demands and psychological impacts before, during and after events such as COVID-19 to minimise risks and enhance resilience (Brooks et al, 2016).
 - National evaluation found that Schwartz Rounds provided an opportunity for all staff to meet regularly and reflect on the emotional impact of their work (Flanagan et al, 2020).
- Physical illness including from COVID-19: This includes ensuring access to healthcare and medication for mental and physical health issues.
- Health risk behaviour (Campion, 2019)
 - Smoking prevention, reduction and cessation: Smoking is associated with worse COVID-19 outcomes (section 3.2). Smoking cessation is associated with reduced anxiety and depression (Taylor et al, 2014). Effective pharmacological and non-pharmacological interventions reduce and stop smoking (Campion et al, 2014; Campion et al, 2017a, Campion, 2019).
 - Alcohol use prevention
 - Drug use prevention
 - Diet improvement
 - Physical activity
 - Screen time reduction
 - Insomnia which is associated with screen time in children and adolescents

Coverage of interventions to prevent mental disorder can be facilitated by (Campion, 2019):

- 1) Settings based approaches: These include antenatal/postnatal care settings, preschools, schools, workplace and primary care.
- 2) Addressing socioeconomic inequalities (see above).
- 3) Particular interventions including parenting interventions, addressing parental mental disorder and child adversity.
- 4) Use of digital technology.
- 5) Legislation and regulation.

WHO guidance on mental health and psychosocial considerations during COVID-19 (WHO, 2020k)

This guidance outlined ways to prevent associated stress and mental disorder in the general population which included:

- Empathising with people with COVID-19.
- Minimize watching, reading or listening to news about COVID-19.
- Protecting oneself and supporting others.
- Finding opportunities to amplify positive and hopeful stories and positive images of local people who have experienced COVID-19.

The WHO guidance on mental health and psychosocial considerations during COVID-19 (WHO, 2020k) recommended actions for healthcare workers, people in isolation, children, people with underlying health conditions, people with intellectual/cognitive/psychosocial disabilities, and older adults and their carers.

a) Healthcare workers (see also previous page)

- Use helpful coping strategies such as ensuring sufficient rest and respite during work or between shifts, eat sufficient and healthy food, engage in physical activity, and stay in contact with family and friends. Avoid using unhelpful coping strategies such as use of tobacco, alcohol or drugs.
- Stay connected with loved ones including through digital means and turn to colleagues, managers or other trusted people for social support.
- Focus on longer-term occupational capacity rather than repeated short-term crisis responses.
- Provide good quality communication and accurate information updates to all staff.
- Rotate workers from higher-stress to lower-stress functions.
- Partner inexperienced workers with their more experienced colleagues.
- Ensure staff enter the community in pairs. Initiate, encourage and monitor work breaks.
- Implement flexible schedules for workers who are directly impacted or have a family member affected by a stressful event.
- Ensure that you build in time for colleagues to provide social support to each other.
- Ensure that staff are aware of where and how they can access mental health and psychosocial support services and facilitate access to such services.
- Orient all responders including nurses, ambulance drivers, volunteers, case identifiers, teachers and community leaders and workers in quarantine sites, on how to provide basic emotional and practical support to affected people using psychological first aid (WHO, 2011).

b) People in isolation

- Stay connected and maintain social networks. If physical distancing, stay connected via telephone, e-mail, social media or video conference.
- Try to keep personal daily routines or create new routines if circumstances change.
- During times of stress, pay attention to own needs and feelings. Engage in healthy activities that are enjoyable and relaxing. Exercise regularly, keep regular sleep routines and eat healthy food. Keep things in perspective.
- Avoid watching too much news. Seek information updates and practical guidance at specific times during the day from health professionals and avoid listening to or following rumours.

c) Children

- Help children find positive ways to express feelings such as fear and sadness.
- Keep children close to their parents and family, if considered safe, and avoid separating children and their carers as much as possible.
- Maintain familiar routines in daily life as much as possible, or create new routines, especially if children must stay at home.
- Provide engaging age-appropriate activities for children, including activities for their learning. Where possible, encourage children to continue to play and socialize with others, even if only within the family when advised to restrict social contact.

d) People with underlying health conditions

- Ensure access to regular medications.
- Activate social contacts to provide assistance.
- Be prepared and know in advance where and how to get practical help if needed, like calling a taxi, having food delivered and requesting medical care.
- Learn simple daily physical exercises to perform at home, in quarantine or isolation to maintain mobility and reduce boredom.
- Keep regular routines and schedules or help create new ones in a new environment, including regular exercising, cleaning, daily chores, singing, painting or other activities.
- Keep in regular contact with loved ones including by digital means.

e) People with intellectual, cognitive and psychosocial disabilities

Use understandable ways to share messages.

f) Older adults and their carers

- Older adults, especially in isolation and those with dementia, may become more anxious, angry, stressed, agitated and withdrawn during the outbreak or while in quarantine. Provide practical and emotional support through informal networks and health professionals.
- Share simple facts about what is going on and give clear information about how to reduce risk of infection in words older people with/without cognitive impairment can understand.
- Engage family members and other support networks in providing information and helping people to practise prevention measures such as handwashing.

7.2 Secondary prevention of mental disorder

Secondary prevention of mental disorder involves early intervention for established mental disorder and associated impacts as soon as they arise to minimise their effects (Campion, 2019). Since most lifetime mental disorder arises before adulthood (Jones, 2013), early intervention for mental disorder should be targeted during childhood and adolescence. Secondary prevention of COVID-19 in those with mental disorder involves early:

- Isolation of patients and staff with symptoms.
- Testing of patients and staff.
- Treatment and support.
- Tracing, quarantining and testing of contacts.

7.3 Tertiary prevention of mental disorder

Tertiary prevention of mental disorder involves prevention of relapse along with actions to both address and prevent associated impacts outlined in section 4.1.

Tertiary prevention of mental disorder including during a pandemic include (Campion, 2019):

- Implementation of evidence-based treatments for mental disorder to prevent relapse. This includes ensuring availability of essential, generic psychotropic medications at all levels of health care (WHO, 2020k). People living with long-term mental health conditions or epileptic seizures need uninterrupted access to their medication, and sudden discontinuation should be avoided.
- Management of urgent mental health issues within emergency or general healthcare facilities (WHO, 2020k). Appropriate trained and qualified staff may need to be deployed to these locations and the capacity of general healthcare staff capacity to provide mental health and psychosocial support should be increased.
- Interventions to prevent and address:
 - Physical health conditions including COVID-19 (see below) and diabetes (Holman et al, 2020)
 - Health risk behaviours such as smoking, alcohol use, drug use, physical inactivity, obesity, diet, sexual risk behaviour and insomnia.
 - Education
 - Employment
 - Socioeconomic issues such as benefits and debt
 - Housing issues
 - Stigma and discrimination: Stigma associated with mental health problems may cause reluctance to seek support for both COVID-19 and mental disorder (WHO, 2020k; WHO, 2020l)
 - Social isolation
 - Suicide
 - Violence and abuse

Coverage of secondary and tertiary mental disorder prevention treatment can be facilitated by (Campion, 2019):

- 1) Screening and education
- 2) Improving population literacy
- 3) Settings based approaches
- 4) Maximising existing resources through self-help, less intense intervention, improving concordance and tasking shifting
- 5) Digital technology
- 6) Parenting interventions
- 7) Legislation and regulation

7.4 Prevention of COVID in people with mental disorder

a) Community treatment

- Screening for COVID-19 symptoms prior to entry to a healthcare setting: This can be done by phone, can prompt additional infection control measures and facilitate delay for non-urgent visits.
- Physical distancing between staff, between staff and patients, and between patients: A systematic review and meta-analysis found that transmission of viruses was 82% lower with physical distancing of 1m compared with less than 1m and that each additional 1m of separation more than doubled relative protection with data available up to 3m (Chu et al, 2020).
- Use of PPE by staff and patients (see section 5.3).
- Reduce frequency of face-to-face contact with patients through:
 - Use of telephone and video communication.
 - Delivery of medication to patients' residence.
 - Reducing frequency of some depots by changing to longer lasting forms.
 - Reducing frequency of monthly clozapine blood monitoring to every 3 months, delivering medication to patient's house and monthly phone contact.
- Pneumococcal vaccination for people with physical health conditions (see section 5.6).
- In people with suspected or confirmed infection:
 - Isolation in separate waiting areas.
 - Face masks for patients with suspected or confirmed COVID-19.
 - Staff use standard, contact and droplet precautions (gown, gloves and medical mask) (WHO, 2020j).
 - Contact tracing, testing and quarantining.

b) Inpatient treatment

- Use of PPE by staff.
- Physical distancing between staff, between staff and patients, and between patients.
- Avoidance of group activities.
- Regular hand washing.
- Restricting family visits (Xiang et al, 2020b).
- Testing of both symptomatic and asymptomatic health care workers (Black et al, 2020) given hospitals are high-risk settings (Wang et al, 2020a; Baharoon & Memish, 2019).
- Patients with suspected or confirmed COVID-19.
 - Isolation in separate ward areas.
 - Face masks for patients with suspected or confirmed COVID-19.
 - In people with suspected or confirmed infection, staff use standard, contact and droplet precautions (gown, gloves and medical mask) (WHO, 2020j).
 - Contact tracing, testing and quarantining.

c) Precautions for people taking clozapine

Clozapine is the most effective antipsychotic medication of treatment resistant schizophrenia although requires regular monitoring of neutrophil count because of the risk of clozapine associated neutropenia. The following is recommended for the duration of the COVID-19 pandemic (Siskind et al, 2020):

- Frequency of neutrophil count reduced to every three months for people on clozapine for more than a year, if never having a neutrophil count <2000/uL or no safe or practical access to neutrophil testing.
- For those with any symptoms of infection including of COVID-19, an urgent physician assessment including a complete count.
- If developing fever and flu-like symptoms, signs and symptoms of clozapine toxicity may require reduction of clozapine dose by up to half until three days after fever has subsided and then increasing in a stepwise manner to pre-fever dose.

Further advice includes (Taylor, 2020):

- Patients without symptoms of COVID-19: Patients who are self-isolating should not attend healthcare settings for phlebotomy. Blood tests should be performed at the patient's home, using personal protective equipment and techniques. Patients can be supplied with the maximum amount of clozapine to cover the isolation period and prevent gaps in treatment.
- Patients with symptoms of COVID-19: Patients presenting with flu-like symptoms: continue clozapine, take an urgent FBC (suspect neutropaenia). Act on red or amber results in the usual manner). All patients should also have a clozapine plasma level taken.
- Patients presenting with flu-like symptoms, chest pain and shortness of breath: Withhold clozapine (suspect myocarditis and investigate accordingly).

7.5 Promotion of mental wellbeing

Mental wellbeing can be promoted at primary, secondary and tertiary levels outlined at the beginning of this section. People with mental disorder have lower mental wellbeing (McManus et al, 2016; Champion, 2019/table 6) and therefore require targeted wellbeing promotion approaches. Different evidence-based interventions to promote mental wellbeing can be considered by different stages of the life course which can be divided into starting well, developing well, living well, working well and ageing well (Champion, 2019) some of which are more relevant during a pandemic

- Starting well: Promotion of parental mental and physical health, breastfeeding support, family interventions, parenting support/education, infant attachment and parenting programmes.
- Developing well: Preschool and early education programmes, parental reading to children, school-based mental health promotion programmes, afterschool programmes, and family-based intervention.
- Living well: Social interaction while maintaining physical distancing, physical activity promotion including at home, financial interventions, neighbourhood and housing interventions, access to green space while maintaining physical distancing, arts/creativity/culture, positive psychology interventions, mindfulness and meditation, spiritual and religious interventions.
- Working well: Increased control, flexible working including working from home, training to improve jobs, shared activities including through digital, online psychological approaches, and support for people recovering from mental disorder.
- Ageing well: Older people are higher risk of COVID-19 and are advised to be particularly stringent about physical distancing. Ways to promote mental wellbeing include living well

interventions outlined above as well as psychosocial interventions while maintaining physical distancing, physical activity including at home, life reminiscence and addressing hearing loss.

7.6 Promotion of resilience

Resilience involves negotiating, managing and adapting to stress or trauma. Having resilience protects against onset of mental disorder, poor mental wellbeing and associated impacts.

Resilience can be promoted through (Campion, 2019):

- School-based interventions including in lower income countries.
- School based mindfulness programmes.
- Work-based programmes particularly for those at higher risk of stress: A systematic review found that health professionals could be supported and prepared for both demands and psychological impacts before, during and after events such as COVID-19 to minimise risks and enhance resilience (Brooks et al, 2016).
- Adult and parental support to mitigate impact of child adversity.

Coverage of interventions to promotion mental wellbeing and resilience can be facilitated by settings-based approaches and digital technology (Campion, 2019).

8. PUBLIC MENTAL HEALTH IMPLEMENTATION GAP

The population impact of any intervention depends on how many people it reaches and subsequent outcomes.

However, despite existence of effective PMH interventions, implementation is poor even in high income countries (Campion, 2019; WHO, 2018b). Globally, only a minority of those with mental disorder receive any treatment, coverage of interventions to prevent associated impacts is much less while coverage of interventions to prevent mental disorder or promote mental wellbeing is negligible (WHO, 2018b). This implementation failure contravenes the right to health (Campion & Knapp, 2018).

Impacts of the PMH implementation gap include (Campion, 2019):

- Large scale preventable suffering and lost potential.
- Impacts of mental disorder at individual/family/community levels and across health/education/employment/criminal justice systems.
- Associated avoidable costs across different sectors.

Causes are important to identify in order to reduce the gap and include lack of (Campion, 2019):

- PMH knowledge and training (HEE, 2018).
- Information about size, impact and cost of PMH intervention unmet need at local and national levels (Campion et al, 2017b; Campion & Knapp, 2018).
- Information about estimated impacts and associated economic benefits of improved coverage at national level. Such data would inform transparent decisions about acceptable coverage and the required resource (Campion & Knapp, 2018).
- Appropriate policy targets to reflect required coverage.
- Resource associated with lack of political will and/or understanding by those who allocate resources: Despite at least 20.6% of global disease burden due to mental disorder (WHO, 2018a), global expenditure on mental disorder treatment was less than 2% of general government expenditure (WHO, 2018b).

Given the implementation gap of PMH interventions prior to COVID-19 outlined above, it would be expected that this gap exists for COVID-19 relevant PMH interventions. Mental health care for patients and professionals directly affected by COVID-19 has been under-addressed in part due to lack of epidemiological data on psychiatric morbidity in those with suspected or confirmed COVID-19 (Xiang et al, 2020a). Furthermore, psychiatrists lack adequate training in prevention and treatment of infectious diseases (Xiang et al, 2020b). However, organisation of psychological interventions during a pandemic is also limited by lack of (Duan & Zhu, 2020):

- Needs assessment including risk factors for mental disorder.
- Coordinated planning at national/regional level.
- Practical implementation.
- Coordination between community and mental health services.
- Mental health professionals and capacity.
- Mental health knowledge by clinical staff working with patients with COVID-19.

9. ACTION TO ADDRESS PUBLIC MENTAL HEALTH IMPLEMENTATION GAP INCLUDING FOR COVID-19

Public mental health practice takes a whole population approach to sustainably reduce mental disorder and improve mental wellbeing through provision of PMH interventions in both short and longer terms.

Prior to the COVID-19 pandemic, there was already a compelling need to address the failure of scale implementation of evidence based PMH interventions given the impacts and economic costs. Since COVID-19, the case for scale implementation has become even more urgent (Campion et al, 2020a).

Public mental health practice including during COVID-19 is a way to prepare for and address the PMH implementation gap in the following ways (Campion, 2019; Campion et al, 2020a):

1. Assessment of national population size, impact and cost of the current and future PMH intervention implementation gap taking COVID-19 into account.
2. Identification of assets to address gaps.
3. Assessment of impact and associated economic benefits from improved coverage of PMH interventions (Campion & Knapp, 2018).
4. Use of information from steps 1,2 and 3 to inform national policy and transparent decisions about acceptable level of coverage of different PMH interventions. This informs level of provision, required resource, commissioning and coordination by different providers including health, public health, education, employers, housing and criminal justice.
5. Communication to the general population, higher risk groups, and health and allied professionals to improve awareness and reduce distress associated with uncertainty.
6. Operationalization of intervention implementation at national and local level.
7. Evaluation of coverage and outcomes including for higher risk groups.

Population access to PMH interventions including during a pandemic can be improved in the following ways (Campion, 2019):

- PMH training for health and allied professionals: This includes online training (Campion, 2020) and covers COVID-19 related issues and interventions to both address and prevent COVID-19 including for those with mental disorder.
- Improving population knowledge about mental health and wellbeing including related to COVID-19.
- Use of digital technology: Many PMH interventions including treatment can be delivered digitally (Campion, 2019). Digital technology can also support mental health of health professionals and carers (Sherifali et al, 2018), reduce social isolation (Bessaha et al, 2019; Shah et al, 2019), address stigma (Griffiths et al, 2014), deliver PMH training (Campion, 2020) and support contact tracing (Ferretti et al, 2020). However, a minority have no digital access and need alternative ways to receive such interventions in order to prevent widening of inequalities.
- Settings and group approaches: A large proportion of the population spends much of their time in particular settings such as school and workplace where more than one PMH intervention can be delivered. During lock down or quarantine, PMH interventions can also be

delivered digitally to such groups e.g. online school-based drug and alcohol prevention (Champion et al, 2013), and online workplace mindfulness, stress management and CBT (Stratton et al, 2017). Health professionals can be supported and prepared for both demands and psychological impacts before, during and after events such as COVID-19 to minimise risks and enhance resilience (Brooks et al, 2016). For healthcare workers, clear communication, access to adequate personal protection, adequate rest, and both practical and psychological support were associated with reduced psychiatric morbidity (Kisely et al, 2020).

- Integrated approaches to facilitate coordinated delivery of PMH interventions across sectors.
- Maximising existing resources such as self-help, task shifting to less trained individuals, improving concordance with treatment and traditional healers particularly in LMICs.
- Application of relevant legislation to support implementation.

Public mental health practice improves coverage of interventions to treat mental disorder, prevent associated impacts, prevent mental disorder from arising and promote mental wellbeing. This results in broad impacts across health, education and employment with associated economic returns even in the short term. The impact of PMH practice and improved coverage is even greater during pandemics such as COVID-19 and should be an integral part of the public health response to COVID-19.

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- Science: Coronavirus research, commentary and news.
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- WHO country and technical guidance for coronavirus disease (COVID-19). World Health Organization. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>
 - Critical preparedness, readiness and response actions for COVID-19
 - National laboratories
 - Risk communication and community engagement
 - Early investigation protocols
 - Naming the coronavirus disease (COVID-19)
 - Country-level coordination, planning and monitoring
 - Clinical care
 - Essential resource planning
 - Virus origin/ reducing animal-human transmission
 - Humanitarian operations, camps and other fragile settings
 - Surveillance, rapid response teams, and case investigation
 - Infection prevention and control/WSH
 - Guidance for schools, workplaces and institutions
 - Points of entry/ mass gatherings
 - Health workers
 - Maintaining essential health services and systems
- WHO dedicated messaging services WhatsApp and Facebook to keep people safe from coronavirus. This easy-to-use messaging service provides information directly to the people that need it. WHO's Health Alert on WhatsApp can be joined:
 - Arabic: Send "مرحبا" to +41 22 501 70 23 on WhatsApp wa.me/41225017023?text=مرحبا
 - French: Send "salut" to +41 22 501 72 98 on WhatsApp wa.me/41225017298?text=salut
 - Spanish: Send "hola" to +41 22 501 76 90 on WhatsApp wa.me/41225017690?text=hola
 - English: Send "hi" to +41 79 893 18 92 on WhatsApp wa.me/41798931892?text=hi
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 - Arabic https://www.who.int/docs/default-source/coronaviruse/coping-with-stress-print-v0-ar.pdf?sfvrsn=df557c4e_2

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- Russian https://www.who.int/docs/default-source/coronaviruse/200762-coping-with-stress-ru.pdf?sfvrsn=df557c4e_8
- Spanish <https://www.who.int/docs/default-source/coronaviruse/200762-coping-with-stress-during-the-2019-sp.pdf>
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- WHO EPI-WIN: WHO information network for epidemics. World Health Organization. <https://www.who.int/teams/risk-communication>

COUNTRY RESOURCES

Argentina

- Association of Argentinian Psychiatrists. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_5a6c14e471dd4b91873248d40790fc47.pdf

Australia

- Life in Mind: Coronavirus (COVID-19) mental health support. <https://lifeinmindaustralia.com.au/support-for-those-impacted-by-adverse-events/mental-health-support-for-covid-19>
- Phoenix Australia: Coronavirus (COVID-19). <https://www.phoenixaustralia.org/coronavirus-covid-19/>
- Royal Australian and New Zealand College of Psychiatrists. <https://www.ranzcp.org/news-policy/covid-19-information-hub>

Brazil

- https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_4893914245eb433f82d700f1dc60255a.pdf
- Manuals for low symptomatic individuals (psychoeducation protocols with and without video support) and for highly symptomatic individuals (brief cognitive-behavioral therapy and interpersonal therapy 4-session manuals). <https://sites.google.com/hcpa.edu.br/telepsi>
- Manual Telepsicoeducação com vídeos. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_4893914245eb433f82d700f1dc60255a.pdf
- Manual Telepsicoeducação sem vídeos. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_de79246ca87b42b083a9efddc9efd980.pdf
- Manual Telepsicoterapia Cognitivo-Comportamental. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_d237c6d28cb5452d96533e826151f95d.pdf
- Manual Telepsicoterapia Interpessoal.

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Canada

- Mental health Commission of Canada COVID-19 resources.
<https://www.mentalhealthcommission.ca/English/mhcc-covid-19-resources>
- Centre for Addiction and Mental Health (CAMH): Mental health and the COVID-19 pandemic.
<https://www.camh.ca/en/health-info/mental-health-and-covid-19>
- Peak resilience: Complete mental health guide during COVID-19 pandemic. <https://peak-resilience.com/blog/2020/3/15/covid-19-amp-your-mental-health-a-comprehensive-resource-guide>

China

- National guideline on mental health interventions for current crises in China.
<https://mp.weixin.qq.com/s/GxoGyERR5a4DSQADT7pisg>
- China guiding principles of emergency psychological crisis intervention with new coronavirus infection (27/1/20).
<http://www.nhc.gov.cn/xcs/zhengcwj/202001/6adc08b966594253b2b791be5c3b9467.shtml>

Croatia

- Resources compiled by the Croatian Psychiatric Association.
<http://www.psihijatrija.hr/site/?p=3835>

Estonia

- Psychosocial crisis action plan with other mental health organisations.
https://www.europsy.net/app/uploads/2020/05/Ekspertarvamus-ps%C3%BChhosotsiaalse-kriisi-m%C3%B5judest_l%C3%B5plik-22.04seisuga.pdf
- Mental health during the emergency situation compiled by the Estonian government.
<https://www.kriis.ee/en/mental-health-during-emergency-situation>

France

- Resources compiled by the Association of Young Psychiatrists and Young Addictionologists.
<https://www.ajpja.fr/actualites/covid-19-sante-mentale-psychiatrie-toutes-les-ressources-et-informations-pratiques>
- Resources regarding confinement and mental health.
<http://www.psycom.org/Espace-Presses/Actualites-du-Psycom/Epidemie-confinement-et-deconfinement-ressources-utiles-pour-notre-sante-mentale>
- Guidelines for healthy sleep rhythms during confinement. https://www.afpbn.org/wp-content/uploads/2020/04/Sommeil-et-rythmes-en-confinement_final.pdf
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- Coronavirus explained by a child psychiatrist. <https://sip.sphweb.fr/2020/03/27/pas-le-coronavirus-album-bd-diffuse-par-la-sip/>

Germany

- Resources compiled by the German Association for Psychiatry, Psychotherapy and Psychosomatics. <https://www.dgppn.de/schwerpunkte/corona.html>
- Resources from the Ethnomedical Center. <https://corona-ethnomed.sprachwahl.info-data.info/>
- Resources from the Federal Commission for Migration, Integration and Refugees. <https://www.integrationsbeauftragte.de/ib-de/amt-und-person/informationen-zum-coronavirus>
- Coronavirus: Tips for Mental Health provided by the DGPPN. <https://www.dgppn.de/presse/pressemitteilungen/pressemitteilungen-2020/corona-psyche.html>

Hong Kong

- Mental wellbeing tips for healthcare workers of COVID-19 patients. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_7aaa121515f44b749369bc9733f1a939.pdf
- Prevention of infectious outbreaks in mental health services. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_5f3c9df0555a4dee9e3b4238d9c8790e.pdf
- National guideline on mental health interventions for current crises in China. <https://mp.weixin.qq.com/s/GxoGyERR5a4DSQADT7pisc>

India

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- Indian Psychiatric Society fights COVID-19: An official report. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_9b6e7f8b685141dbbc2f92f88ca3db02.pdf
- Positive mental health for health care providers. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_54eb884dc94c4d4089f2c7592de19c33.pdf
- Mental health challenges during COVID-19 pandemic: Guidance for Psychiatrists. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_fd7d332d8e7942e3accf162c8fda91d6.pdf
- National Institute of Mental Health & Neurosciences (NIMHANS): Mental health in the times of the COVID-19 pandemic: Guidance for General Medical and Specialised Mental Health Care Settings. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_8adb37921ca648d48da48041c504cc53.pdf

Italy

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- Italian Society for Neurodevelopmental Disorders: Advice on managing mental distress in people with intellectual disability and autism spectrum disorder during the COVID-19 pandemic. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_c427b7464ef84ec2bfaf2eba061a4e59.pdf
- Journal of the Italian Psychiatric Association: Recommendations regarding COVID-19 management in mental health facilities. <https://www.evidence-based-psychiatric-care.org/special-supplement-sars-cov-19-2/>
- Mental health in the Coronavirus Disease 2019 Emergency. The Italian Response. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_ddba5dc885f94eebb197216ca222b901.pdf

Japan

- Japanese Society of Psychiatry and Neurology: Information on COVID-19. https://www.jspn.or.jp/modules/advocacy/index.php?content_id=78
- Psychiatry and Clinical Neurosciences: Mental health issues associated with COVID-19 outbreak. [https://onlinelibrary.wiley.com/doi/toc/10.1111/\(ISSN\)1440-1819.mental-health-issues-associated-with-COVID-19-outbreak](https://onlinelibrary.wiley.com/doi/toc/10.1111/(ISSN)1440-1819.mental-health-issues-associated-with-COVID-19-outbreak)

Kazakhstan

<https://protect-au.mimecast.com/s/Omz4CMwvygsq2qNM2fJnYIH?domain=covid-19.mentalcenter.kz>

Nepal

- Staying Mental Healthy During the COVID-19 Pandemic. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_37f4c0bb8fc14638bffe876aa93f9ad2.pdf
- Combating Stress for Healthcare Workers during COVID-19 Outbreak. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_d1013b01e23c46678eb432b2f7aa0b8f.pdf

New Zealand

- New Zealand government: Looking after your mental wellbeing. <https://covid19.govt.nz/individuals-and-households/health-and-wellbeing/looking-after-your-mental-wellbeing/>
- Ministry of Health: COVID1-9 mental health and wellbeing resources. <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-novel-coronavirus-health-advice-general-public/covid-19-mental-health-and-wellbeing-resources>
- New Zealand Psychological Society: COVID19 resources. <https://www.psychology.org.nz/community-resources/covid-19-resources/>

Poland

- Resources compiled by the Polish Psychiatric Association. https://psychiatria.org.pl/aktualnosci,tekst,390,psychiatria_covid_19_wazne_materialy

Qatar

- Mental health and wellbeing of women during pregnancy and postpartum during COVID-19. https://3ba346de-fde6-473f-b1da-536498661f9c.filesusr.com/ugd/e172f3_7d7c8eb1b6c64cffb63adaa9ec8d6893.pdf

Russia

Website of Russian Society of Psychiatrists.

- <https://psychiatr.ru/tags/CoViD-19>
- <https://psychiatr.ru/news/1102>

Slovakia

- Ministry of Health
 - Hospital psychiatric care. <https://www.standardnepostupy.sk/postupy-pre-nemocnice/>
 - Outpatient care. <https://www.standardnepostupy.sk/postupy-pre-ambulance/>
- Slavic Psychiatric Association
 - <http://www.psychiatry.sk/>
 - <http://standardnepostupy.sk/files/200000480-5f24c5f24e/%C5%A0tandardn%C3%BD%20postup%20pre%20poskytovanie%20%C3%BAstavenej%20psychiatrickej%20starostlivosti%20po%C4%8Das%20pand%C3%A9mie%20COVID%20d%C5%88a%203.5.2020.pdf>

Spain

Resources in Spanish provided by the Spanish Society of Psychiatry

- Resources for Psychiatrists. <http://www.sepsiq.org/file/InformacionSM/SEP%20COVID19-Salud%20Mental%20personal%20sanitario.pdf>
- Resources for Tele-psychiatry. <http://www.sepsiq.org/file/InformacionSM/SEP%20GU%C3%8DA%20COVIDSAM.pdf>
- Resources for the General Public. <http://www.sepsiq.org/file/InformacionSM/SEP%20COVID19-Salud%20Mental%20Cuarentena.pdf>

Turkey

Psychiatric Association of Turkey

- Resources. <https://www.europsy.net/covid-19-resources-turkey/>
- Turkish language resources
 - What can people older than 65 years do in order to protect their mental wellbeing? <https://www.psikiyatri.org.tr/TPDData/Uploads/files/Arapca-Geropsikiyatri.pdf>
 - Simple behavioural techniques in the management of stress. <https://www.psikiyatri.org.tr/TPDData/Uploads/files/Arapca-Gevseme-Egzersizler.pdf>
 - COVID-19 and stigmatization. <https://www.psikiyatri.org.tr/TPDData/Uploads/files/Arapca-Damgalanma-COVID.pdf>

- Kurdish language resources
 - Guidelines for doctors and healthcare professionals in managing COVID-19 related fear and anxiety. <https://www.psikiyatri.org.tr/TPDDData/Uploads/files/XebatkarentendurustiyeSaglikcalisani242020.pdf>
 - What can people older than 65 years do in order to protect their mental well-being? <https://www.psikiyatri.org.tr/TPDDData/Uploads/files/ExtiyarYasli-242020.pdf>
 - Mental health during COVID-19 and coping with stress <https://www.psikiyatri.org.tr/TPDDData/Uploads/files/TendurustiyagiyaniRuhSagligiCOVID-242020.pdf>

UK

- Anxiety
 - <https://www.nhs.uk/oneyou/every-mind-matters/anxiety/>
 - Health and other forms of anxiety and coronavirus. <https://www.anxietyuk.org.uk/blog/health-and-other-forms-of-anxiety-and-coronavirus/>
 - OCD and coronavirus survival tips. <https://www.ocduk.org/ocd-and-coronavirus-survival-tips/>
- Carers UK. Coronavirus guidance. <https://www.carersuk.org/help-and-advice/coronavirus-covid-19/coronavirus-covid-19>
- Centre for Evidence Medicine. Oxford COVID-19 evidence service. <https://www.cebm.net/oxford-covid-19-evidence-service/>
- Dementia. <https://www.alzheimers.org.uk/get-support/coronavirus-covid-19#content-start>
- Employment
 - <https://www.mentalhealthatwork.org.uk/toolkit/coronavirus-and-isolation-supporting-yourself-and-your-colleagues/>
 - <https://www.who.int/docs/default-source/coronaviruse/advice-for-workplace-clean-19-03-2020.pdf>
- Government Office for Science
 - <https://www.gov.uk/coronavirus>
 - Guidance: The R number and growth rate in the UK <https://www.gov.uk/guidance/the-r-number-in-the-uk>
- Institute of Health Visiting: Family perinatal mental health – iHV COVID-19 professional advice. <https://ihv.org.uk/news-and-views/news/new-publication-ihv-covid-19-professional-advice-family-perinatal-mental-health/>
- Learning disability https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/874281/COVID-19_easy_read.pdf
- Local Government Association
 - Coronavirus: information for councils. <https://www.local.gov.uk/our-support/coronavirus-information-councils>
 - Public mental health and wellbeing and COVID-19. <https://local.gov.uk/public-mental-health-and-wellbeing-and-covid-19>

- Tackling domestic abuse during the COVID-19 pandemic.
<https://www.local.gov.uk/tackling-domestic-abuse-during-covid-19-pandemic>
- Maternal Mental Health Alliance: Coronavirus and maternal mental health guidance.
<https://maternalmentalhealthalliance.org/news/mmha-members-offer-reassurance-amid-coronavirus-outbreak/>
- Mental Health Foundation: How to look after your mental health during the Coronavirus outbreak. <https://www.mentalhealth.org.uk/coronavirus>
- Mind: Coronavirus and your wellbeing. <https://www.mind.org.uk/information-support/coronavirus/coronavirus-and-your-wellbeing/>
- MindEd staff resilience hub. Helping frontline staff to manage your mental health and wellbeing <https://covid.minded.org.uk/>
- NHS England
 - Mental health, learning disabilities and autism: Guidance.
<https://www.england.nhs.uk/coronavirus/publication/letter-responding-to-covid-19-mental-health-learning-disabilities-and-autism/>
 - Community based health, social care, mental health trusts and ambulance services.
<https://www.england.nhs.uk/coronavirus/community-social-care-ambulance/>
 - Managing capacity and demand within inpatient and community mental health, learning disabilities and autism services for all ages.
<https://www.england.nhs.uk/coronavirus/publication/guidance-managing-capacity-and-demand-within-inpatient-and-community-mental-health-learning-disabilities-and-autism-services-for-all-ages/>
 - Coronavirus guidance for clinicians and NHS managers.
<https://www.england.nhs.uk/coronavirus/>
 - Every mind matters. <https://www.nhs.uk/oneyou/every-mind-matters/>
 - Speciality guide. <https://www.england.nhs.uk/coronavirus/secondary-care/other-resources/specialty-guides/>
- NICE (2020) Coronavirus (COVID-19). <https://www.nice.org.uk/guidance/conditions-and-diseases/infections/covid19>
- Office for National Statistics. Coronavirus (COVID-19). Latest data and analysis on coronavirus (COVID-19) in the UK and its effect on the economy and society.
<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases>
- Physical activity: Home work out videos.
 - <https://www.nhs.uk/oneyou/for-your-body/move-more/home-workout-videos/>
 - <https://www.nhs.uk/conditions/nhs-fitness-studio/>
- Public Health England
 - Guidance for the public on the mental health and wellbeing aspects of coronavirus (COVID-19). <https://www.gov.uk/government/publications/covid-19-guidance-for-the-public-on-mental-health-and-wellbeing/guidance-for-the-public-on-the-mental-health-and-wellbeing-aspects-of-coronavirus-covid-19>
 - Guidance for parents and carers on supporting children and young people's mental health and wellbeing during the coronavirus (COVID-19) outbreak.
<https://www.gov.uk/government/publications/covid-19-guidance-on-supporting->

- [children-and-young-peoples-mental-health-and-wellbeing/guidance-for-parents-and-carers-on-supporting-children-and-young-peoples-mental-health-and-wellbeing-during-the-coronavirus-covid-19-outbreak](#)
- COVID-19: guidance for supported living provision. <https://www.gov.uk/government/publications/covid-19-residential-care-supported-living-and-home-care-guidance/covid-19-guidance-for-supported-living-provision>
 - Stay at home: guidance for households with possible coronavirus (COVID-19) infection. <https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-households-with-possible-coronavirus-covid-19-infection>
 - Royal College of Nurses: COVID-19 guidance. <https://www.rcn.org.uk/clinical-topics/mental-health/covid-19-guidance>
 - Royal College of Psychiatrists
 - Patient engagement – COVID-19 guidance for clinicians. <https://www.rcpsych.ac.uk/about-us/responding-to-covid-19/responding-to-covid-19-guidance-for-clinicians/patient-engagement-covid-19-guidance-for-clinicians>
 - COVID-19: Community mental health settings. <https://www.rcpsych.ac.uk/about-us/responding-to-covid-19/responding-to-covid-19-guidance-for-clinicians/community-and-inpatient-services/covid-19-working-in-community-mental-health-settings>
 - COVID-19: Secondary and specialist mental health settings. <https://www.rcpsych.ac.uk/about-us/responding-to-covid-19/responding-to-covid-19-guidance-for-clinicians/community-and-inpatient-services/covid-19-working-in-secondary-and-specialist-mental-health-settings>
 - COVID-19: Providing medication. <https://www.rcpsych.ac.uk/about-us/responding-to-covid-19/responding-to-covid-19-guidance-for-clinicians/community-and-inpatient-services/providing-medication>
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