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# **Rapid review of public health guidance on physical distancing in the context of COVID-19**

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## Key points

- Guidance documents relating to physical distancing measures during the COVID-19 pandemic from ten countries and two international public health bodies were considered in this review.
- There was some variation in the guidance issued (across different settings) in relation to the recommended safe physical distance required to reduce the risk of SARS-CoV-2 transmission:
  - Public health agencies in Scotland, England, Northern Ireland, the United States and Canada currently recommend maintaining a physical distance of 2 metres (or 6 feet) for the general public, where possible.
  - A physical distance of 1.5 metres is recommended in Switzerland and Australia.
  - Public health agencies in Norway and Singapore, and the WHO, recommend maintaining a physical distance of at least 1 metre in non-healthcare settings. In some higher risk settings or activities, physical distancing of more than 1 metre is advised. The ECDC advises a physical distancing of at least 1 metre when using public transport.
  - Public Health England has advised that 1 metre, in addition to risk mitigation measures, is sufficient in selected settings such as bars, restaurants, and close contact services.
  - There is currently no requirement for physical distancing in New Zealand as the disease is contained.
- Physical distancing recommendations in education and childcare settings acknowledge that adhering to physical distancing measures with young children may be more challenging, but advise that physical contact should be minimised, where possible.
- In general, the guidance on physical distancing recommends that appropriate risk mitigation strategies should be implemented when physical distancing measures cannot be consistently applied.
- A limited number of frameworks have been developed to facilitate an assessment of the risk of transmission of SARS-CoV-2 in different settings. All frameworks recommend the use of additional risk mitigation strategies when safe physical distancing guidance cannot be consistently applied.
- A physical distance of within 1 to 2 metres of a confirmed case of COVID-19 was outlined in most definitions of 'close contact'. Other considerations included the duration of exposure, the setting, the nature of the contact (that is, direct or indirect) and the timing of the contact during the clinical course of infection of the confirmed case.

## Background

The term physical or social distancing refers to 'efforts that aim, through a variety of means, to decrease or interrupt transmission of COVID-19 in a population (sub-) group by minimising physical contact between potentially infected individuals and healthy individuals, or between population groups with high rates of transmission and population groups with no or a low level of transmission.'<sup>(1)</sup>

As public health restrictions are eased internationally, schools, businesses, public spaces, among other settings, are beginning to reopen with risk mitigation measures in place, informed by public health guidance, to reduce or prevent transmission of SARS-CoV-2 (the virus that causes COVID-19). To inform guidance development by the Health Protection Surveillance Centre (HPSC), the Health Information and Quality Authority (HIQA) undertook a rapid review to summarise the published public health guidance in relation to physical distancing in non-healthcare settings.

This review set out to identify physical distancing guidance in three specific areas:

1. The use of physical distancing measures in non-healthcare settings
2. The availability of risk assessment tools or frameworks to assist in the development of physical distancing guidance in non-healthcare settings
3. The physical distance specified in the identification of close contacts during contact tracing

## Methods

This review was conducted in line with HIQA's *Protocol for the identification and review of new and updated relevant public health guidance - COVID-19*, available on [www.hiqa.ie](http://www.hiqa.ie). A detailed account of the methods used in this review is provided in the protocol. Relevant international resources were identified as per the protocol. This review is limited to guidance documents explicitly related to COVID-19.

## Results

Guidance documents in relation to physical distancing during the COVID-19 pandemic were identified for inclusion in this review from ten countries, in addition to two international public health bodies. Many of the guidance documents identified have been developed in consultation with relevant stakeholders in individual countries. In some circumstances, guidance regarding physical distancing is updated regularly to reflect the stage of the pandemic and the context or setting-specific risk of transmission.

The following agencies and guidance documents were included in this review:

- England: As part of the guidance and support for businesses and self-employed people during coronavirus, the Department for Business, Energy & Industrial Strategy (BEIS), and the Department for Digital, Culture, Media & Sport (DCMS) in consultation with **Public Health England (PHE)** and other

relevant groups, have issued sector-specific guidance on physical distancing at work. Sector-specific guidance (updated 24 June 2020) has been issued for a number of business sectors including vehicles as a working environment,<sup>(2)</sup> shops,<sup>(3)</sup> restaurants, pubs, bars and takeaway services,<sup>(4)</sup> hotels,<sup>(5)</sup> other people's homes,<sup>(6)</sup> offices,<sup>(7)</sup> laboratories and research facilities,<sup>(8)</sup> factories, plants and warehouses<sup>(9)</sup> outdoor work<sup>(10)</sup> and close contact services.<sup>(11)</sup> Guidance for the general public in a variety of settings (updated 24 June 2020)<sup>(12)</sup> and those in education and childcare settings (updated 1 June 2020)<sup>(13)</sup> is also available. The NHS test and trace service (updated 11 June 2020) provides guidance on the conduct of contact tracing.<sup>(14)</sup>

- **Scotland: Health Protection Scotland (HPS)** issued guidance for non-healthcare settings, including advice on physical distancing on 20 May 2020.<sup>(15)</sup> Contact tracing guidelines on the identification and management of contacts of confirmed cases of SARS-CoV-2 for the general public,<sup>(16)</sup> and those in complex settings,<sup>(17)</sup> were updated on 22 June 2020. A risk assessment framework for non-healthcare settings outlines the key considerations when conducting risk-based assessments of non-health or social care associated workplaces.<sup>(15)</sup>
- **Northern Ireland: The Public Health Agency (PHA) of Northern Ireland** has issued guidance for the general public on physical distancing.<sup>(18)</sup> Physical distancing guidance is available from the **Department of Education** on the re-opening of schools for pre-school children, children and adults working in educational settings.<sup>(19-21)</sup> Information regarding contact tracing in Northern Ireland is also available from the PHA of Northern Ireland.<sup>(22)</sup>
- **Switzerland: The Federal Office of Public Health (FOPH)** has simplified the protection plans on 19 June 2020. All publicly accessible venues must continue to have specific precautionary measures in place; however, the guidance is consistent for most settings.<sup>(23)</sup> Guidance for some settings, often in collaboration with other national organisations has been developed, or is currently under review. GastroSuisse (a Swiss employers association for the hospitality industry) in collaboration with the **Federal Office for Food Safety and Veterinary Affairs (OSAV)**, the **State Secretariat for Economic Affairs (SECO)** and the FOPH provides advice on physical distancing in hotel and catering establishments (updated 22 June 2020).<sup>(24)</sup> Guidance issued by the **State Secretariat for Economic Affairs (SECO)** for businesses and institutions is currently being updated. A summary of the simplified protection plan is available in the interm.<sup>(25)</sup> Recommendations in relation to physical distancing on public transport is available from the **Federal Office of Transport** (updated 8 June 2020).<sup>(26)</sup> Guidance on physical distancing during sporting activities and events, and for religious services and gatherings is available from the **Swiss Olympic Website** (updated 22 June 2020) and FOPH (updated 19 June 2020), respectively.<sup>(23,</sup>

<sup>27)</sup> Guidance in relation to contact tracing in Switzerland is available from FOPH (updated 23 June 2020).<sup>(28)</sup>

- Norway: The **Norwegian Institute of Public Health (NIPH)** published updated guidance on physical distancing, quarantine and isolation on 24 June 2020.<sup>(29)</sup> Guidance for schools and childcare centres (updated 4 June 2020),<sup>(30)</sup> and universities and colleges (updated 23 June 2020)<sup>(31)</sup> has been developed by NIPH and the **Norwegian Directorate for Education and Training**. Guidance on social distancing during sporting activities (updated 15 June 2020), events (updated 15 Jun 2020) and in workplaces (updated 29 May 2020), as well as sector-specific advice, has been issued.<sup>(32-36)</sup> Recommendations in relation to contact tracing were updated on 17 June 2020.<sup>(29)</sup> NIPH has developed a tool for use in childcare centres, schools and afterschool clubs that classifies the necessary infection control measures based on the risk of infection.<sup>(37)</sup>
- Australia: The **Government of Australia's Department of Health** has published a 3-step framework including physical distancing guidance in different settings at the various stages of reopening non-healthcare associated workplaces and premises (updated 15 June 2020).<sup>(38)</sup> Infection control guidelines for community sport are also available (published 30 May 2020).<sup>(39)</sup> The **Australian Health Protection Principal Committee (AHPPC)** has issued guidance for boarding schools and school-based residential colleges (published 17 June 2020), early childhood and learning centres (published 25 May 2020) and large gatherings (published 5 June 2020).<sup>(40)</sup> The **Communicable Diseases Network Australia (CDNA)** has issued guidance on contact tracing as part of their recommendations for surveillance, infection control, laboratory testing and contact management for COVID-19 (updated 12 June 2020).<sup>(41)</sup>
- New Zealand: **The New Zealand Ministry of Health** has published public health guidelines for businesses and services with reference to physical distancing requirements at the various alert levels.<sup>(42)</sup> Current guidance is based on Alert Level 1, whereby the disease is contained in New Zealand and there are no physical distancing requirements. Guidance in relation to contact tracing was published by the Ministry of Health on 12 June 2020.<sup>(43)</sup> The COVID-19 Alert System outlines physical distancing measures in particular community settings, according to the perceived level of risk.<sup>(44)</sup>
- Canada: The **Government of Canada** has issued guidance for community settings (updated 30 May 2020), including congregated living settings, businesses, child and youth settings, outdoor spaces and interpersonal gatherings.<sup>(45)</sup> Guidance for mass gatherings is currently under review. Updated guidance in relation to the management of cases and contacts associated with COVID-19 is also available.<sup>(46)</sup> Frameworks for risk assessment and mitigation in community settings and events have been

developed for use by public health authorities and event organisers, respectively.<sup>(45, 47)</sup>

- Singapore: On 15 June 2020, the **Government of Singapore** announced that Singapore would move into phase two of their exit plan on 18 June 2020. Sector-specific guidance, including physical distancing advice, has been issued for the planned reopening of public places during phase two of their exit plan. The **Ministry of Health, Sport Singapore, the Ministry of Culture, Community and Youth (MCCY), the Monetary Authority of Singapore (MAS), Enterprise Singapore, Singapore Land Authority (SLA)** and **the Ministry of Education** have issued guidance in relation to the resumption of sport and physical exercise activities, religious activities, the financial sector, businesses, playfields and beaches and schools and institutes of higher learning, respectively on 18 June 2020.<sup>(48-54)</sup> Contact tracing guidance has been published by the Ministry of Health (updated 24 June 2020).<sup>(55)</sup>
- **The World Health Organisation (WHO)** published interim guidance on public health and social measures for the general public (published 18 May 2020), as well as considerations for physical distancing in the workplace and school-related activities (published 10 May 2020).<sup>(56-58)</sup> Interim guidance on key planning recommendations for mass gatherings in the context of COVID-19 was published on 29 May 2020.<sup>(59)</sup> Interim guidance in relation to contact tracing during the COVID-19 pandemic was published on 10 May 2020.<sup>(60)</sup>
- **The European Centre for Disease Prevention and Control (ECDC)** has published guidance regarding general considerations for physical distancing, in addition to guidance on physical distancing on public transport (published 29 April 2020).<sup>(1, 61)</sup> A technical report outlining guidance for contact tracing was published on 8 April 2020.<sup>(62)</sup>
- **The Centers for Disease Control and Prevention (CDC)** have updated their guidance on physical distancing (updated 6 May 2020) and contact tracing in relation to COVID-19 (updated 26 May 2020).<sup>(63, 64)</sup>

A summary of the physical distancing guidance for the three specific areas outlined in this review is provided separately below.

## **1. Physical distancing in non-healthcare settings**

### *Overview of international physical distancing guidance*

The WHO recommends maintaining a safe physical distance of at least 1 metre and advises against spending time in crowded places or in groups.<sup>(58)</sup> The ECDC recommends maintaining a distance of 1 metre on public transport, however, no general guidelines on a safe physical distance have been issued.<sup>(61)</sup>

There is variation in the guidance on physical distance between and within countries. A physical distance of approximately two metres is recommended by government and public health bodies in most non-healthcare settings in England, Scotland, Northern Ireland, the United States and Canada. A safe physical distance of 1.5 metres is recommended in Australia and Switzerland. In general, public health and government bodies in Norway and Singapore advise that at least 1 metre physical distancing is maintained in non-healthcare settings, however, in certain higher-risk settings increased physical distancing is recommended.

Current recommendations in place in New Zealand advise that physical distancing is not necessary based on the current state of the pandemic. At previous alert levels (that is, the restrictive measures to prevent the spread of SARS-CoV-2 at particular risk levels) guidance on physical distancing was 1 metre in controlled environments (that is, public and private venues, schools, workplaces, museums, swimming pools, galleries, cinemas, stadiums, conference facilities and casinos) compared with 2 metres in uncontrolled environments (that is, settings where people have open access to the premises, generally don't know each other and are unlikely to be in close contact with each other for an extended period of time).

On 19 June, the Chief Medical Officers for England, Scotland, Wales and Northern Ireland lowered the COVID-19 alert level from level four to level three following advice from the Joint Biosecurity Centre.<sup>(65)</sup> At alert level three, the virus is considered to be in general circulation but transmission is no longer high or rising exponentially. As a result, the UK Government has decided to continue to ease restrictions. Guidance issued on the 24 June 2020 recommends that in certain settings such as bars, restaurants or close contact services (for example hairdressing), where 2 metre physical distancing is not possible, then 1 metre distancing with risk mitigation is advised.<sup>(4, 11)</sup> Other groups are advised to maintain a physical distance of 2 metres, where possible. On 19 June the Federal Council in Switzerland eased restrictive measures.<sup>(23)</sup> Under the revised protection plan, the same requirements remain for all establishments, businesses, schools and events.

Table 1 presents an overview of the physical distancing measures in different settings by country and organisation; a brief summary of the differences in these measures, or physical distances by setting, is provided below.

### *Physical distancing guidance for the general public*

The ECDC has compiled considerations relating to physical distancing measures that aim to support public health preparedness planning and response activities, however, the guidance does not recommend or endorse a specific distance when defining physical distance.<sup>(1)</sup> Whereas, the WHO recommends a minimum distance of at least 1 metre between people to limit the risk of interpersonal transmission.<sup>(58)</sup>

The NIPH recommends at least 1 metre distance from everyone, except those in an individual's 'closest circle'.<sup>(29)</sup> The guidance emphasises that the distance between faces is the most important and that the risk of transmission is reduced in

circumstances where the public are back-to-back or standing in a queue.<sup>(29)</sup>

Guidance issued by the Ministry of Health, Singapore recommends that the general public maintain a physical distance of 1 metre during phase two of the exit plan.<sup>(66)</sup>

The Australian Government's Department of Health and FOPH recommend a distance of 1.5 metres for the general public.<sup>(23, 38)</sup>

The Government of Canada, PHE, HPS, the PHA of Northern Ireland, and the CDC recommend maintaining a separation of approximately 2 metres from others to minimise the risk of transmission in most settings.<sup>(12, 15, 18, 45, 64)</sup>

### *Education and childcare settings*

The WHO recommends that a distance of at least 1 metre is maintained between everyone present at school and school-related social situations (e.g. sporting activities, transportation).<sup>(57)</sup> The guidance specifies that the age and experiences of students should be considered and that younger children may find it more challenging to adhere to physical distancing of at least 1 metre.<sup>(57)</sup>

NIPH, in collaboration with the Norwegian Directorate for Education and Training, has developed a risk-based traffic light model to assist in deciding which infection prevention measures are most appropriate to use in kindergartens and schools.<sup>(30)</sup> Kindergartens and schools are advised to plan for a yellow level (medium risk) for autumn 2020.<sup>(37)</sup> At the yellow level, entire departments and school classes can be counted as a cohort. Kindergartens and schools are required to take several measures to reduce contact and keep distance between staff and students. In high schools, outside the classroom, students and staff are encouraged to maintain at least 1 metre distance from each other. Younger age groups (kindergarten and primary school) are expected to minimise contact where possible, but a physical distance measure is not explicitly defined for younger children. In universities and colleges, NIPH recommends that, where possible, to keep at least 1 metre distance between people throughout the day (lecture theatres, practical teaching rooms, canteens, corridors and so on). Measures to reduce the number of students present at the same time should be taken, such as reduced group sizes, different attendance times, and arranging partial digital teaching.<sup>(31)</sup>

In Australia, the AHPPC has issued advice on risk management in boarding schools and school-based residential colleges.<sup>(40)</sup> The guidance advises that current recommendations for physical distancing (that is, 1.5 metres) as well as implementing infection prevention and control measures should be adhered to.<sup>(40)</sup> The risk of adult to adult transmission should be reduced through all staff maintaining 1.5 metre physical distance from other adults (especially in common spaces like staff rooms).<sup>(40)</sup> Children in high school and secondary schools are encouraged to 'keep more space than normal' between themselves and others.<sup>(67)</sup> In early childhood and learning centres, the AHPPC recommends that adults continue to

undertake physical distancing when interacting with other adults, however no specific physical distancing for children in these settings is outlined.<sup>(68)</sup> The Ministry of Education in Singapore advises that at least 1 metre distance between individuals should be maintained in all institutes of higher education. During group-based educational activities, at least 1 metre (preferably 2 metres) is recommended. In school settings, no specific distancing guidance is outlined. However, where possible, safe distancing is encouraged such as fixed exam-style seating in classrooms, or spaced seating arrangements in canteens.<sup>(50)</sup>

Guidance and risk mitigation strategies developed for use in child and youth facilities in Canada recommend physical distancing by 2 metres as much as possible.<sup>(45, 69)</sup> PHE has recommended that secondary schools and colleges should aim to adopt the same physical distancing measures (that is, 2 metres) as workplaces and public places, where possible.<sup>(13)</sup> The guidance advised that classes should be limited to no more than half their usual size, to allow sufficient distancing between pupils. Early years and primary age children cannot be expected to remain 2 metres apart from each other and staff, however, efforts should be made to minimise the risk of spread through adherence to the hierarchy of controls set out in the guidance.<sup>(13)</sup> While in general groups should be kept apart, brief, transitory contact, such as passing in a corridor, is said to be low risk.<sup>(13)</sup>

Guidance on the re-opening of schools in Northern Ireland recommends that the current physical distancing guidance of 2 metres must be followed between all adults within the education sector, but that a distance of 1 metre is appropriate between children and young people while using a 'protective bubble' strategy (that is, organising children into small groups with consistent membership appropriate to the size of the setting).<sup>(20)</sup> Post-primary schools may be able to return to full-time education with physical distancing while implementing a 'protective bubble' strategy for younger year groups. Older pupils (school year 11 and above) will be expected to adhere to physical distancing and will not operate in 'protective bubbles'.<sup>(20)</sup> In pre-school settings, the guidance recommends that children should be organised into small groups or 'protective bubbles' with consistent membership. Children within these groups will not be required to physically distance, but every effort should be made to minimise physical interaction between different groups.<sup>(19)</sup> Guidance for adults working in educational settings acknowledges that young children and children with special educational needs may not understand the need for physical distancing.<sup>(21)</sup> While staff should adhere to physical distancing guidelines of 2 metres as far as possible, the emotional needs of children should also be taken into consideration. The use of risk mitigation strategies such as personal protective equipment (PPE) is advised in circumstances where direct interaction with a child is essential (such as caring for a very young child or a child with complex needs while they await collection).<sup>(21)</sup>

In Switzerland, guidance for physical distancing in primary and lower secondary schools, and upper-secondary schools, tertiary level and CET (that is, continuing education and training programmes and courses) institutions is consistent with the guidance for other public places.<sup>(23)</sup> Education settings are advised to continue to implement precautionary measures to reduce the risk of transmission.

### *Food and beverage industry*

Enterprise Singapore advises that customers and personnel observe at least 1 metre spacing at all times.<sup>(53)</sup> The Government of Australia has advised that people should stay 1.5 metres apart in cafes, restaurants and food courts.<sup>(38)</sup> FOPH in Switzerland has advised that employees and others should maintain a distance of 1.5 metres, where possible. If a partition is installed between groups of customers, then it is no longer necessary to observe distancing measures.<sup>(24)</sup> Physical distancing should still be observed in queues and toilets. The CDC advises that physical distancing should be encouraged in bars and restaurants. Physical barriers, such as sneeze guards and partitions at cash registers, bars, host stands, and other areas where maintaining a physical distance of 6 feet is difficult.<sup>(70)</sup> PHE advises that workers should maintain a physical distance of 2 metres, or 1 metre with risk mitigation where 2 metre distancing is not viable.<sup>(4)</sup>

### *Supermarkets or other essential retail services*

PHE has advised that a distance of 2 metres should be maintained in supermarkets.<sup>(71)</sup> With regard to outdoor food markets and farmers markets, the guidance outlines that the main concern is to avoid large crowds, and recommends adherence to good hygiene practices.<sup>(71)</sup> NIPH recommends a distance of 1 metre in grocery shops.<sup>(72)</sup>

### *Retail and non-essential services*

The Government of Australia has advised that people should stay 1.5 metres apart in retail environments.<sup>(38)</sup> Enterprise Singapore advises at least 1 metre distancing between individual customers, or groups of customers (up to five persons) in retail and lifestyle services (for example, beauty services).<sup>(52)</sup> PHE recommends that for close contact services (such as hairdressers, barbers, beauticians, tattooists, sports and massage therapists, dress fitters, tailors and fashion designers) 2 metre physical distancing should be maintained where possible, but 1 metre with appropriate risk mitigation strategies may be acceptable in circumstances where 2 metre distancing is not viable.<sup>(11)</sup>

### *Public Transport*

The ECDC advises that the number of passengers per vehicle should be reduced to facilitate physical distancing of at least 1 metre.<sup>(61)</sup> If the distance is less than 2 metres, the use of face masks may be considered. HPS advises that the general public should aim to maintain 2 metre physical distancing whenever possible while using public transport.<sup>(15)</sup> FOPH currently recommends that a distance of 2 metres is

observed on public transport, although this guidance has not been updated since restrictions were eased on 22 June 2020. Where adequate physical distancing is not possible, it is strongly recommended that users of public transport wear hygiene masks.<sup>(26)</sup>

### *Outdoor and sporting activities*

The Australian Government Department of Health advises that when watching a game or training, to keep a distance of 1.5 metres between yourself and others.<sup>(39)</sup> In general, NIPH recommends a distance of 1 metre between individuals both indoors and outdoors during sporting activities.<sup>(34)</sup> A distance of at least 1 metre between people who are training should be maintained at all times, but at least 2 metres in high-intensity group sessions with increased exhalation. In less physically demanding group sessions (such as yoga and pilates) 1 metre distance is sufficient.<sup>(34)</sup> The Ministry of Health, Singapore, advises that a distance of 2 metres should be maintained for general sport and exercise activities, while individuals should aim to maintain a distance of 3 metres from other individuals or groups during indoor high-intensity or high-movement exercise classes.<sup>(73)</sup> The Government of Canada recommends physical distancing of 2 metres in outdoor spaces. Low contact sports (such as golf or tennis) can be considered low risk activities if players can maintain physical distancing.<sup>(45)</sup> PHE also recommends keeping 2 metres distance between people not in your household or 'support bubble' at all times.<sup>(12)</sup> As of 22 June 2020, sporting events with up to 1,000 people are permitted in Switzerland. FOPH recommends maintaining a distance of 1.5 metres during sporting activities. If a distance of 1.5 metres cannot be guaranteed, then the wearing of a mask is recommended by FOPH.<sup>(27)</sup> Frameworks for training and competitions within sporting clubs as well as camps in the field of culture, leisure and sport have been developed, outlining the protective measures that should be taken.<sup>(27)</sup>

### *Entertainment, the hospitality industry and other public venues*

The Ministry of Health, Singapore advises that while the vast majority of activities are allowed to resume at the start of phase two of the exit plan, this does not include the resumption of activities where large numbers of people are likely to come into close contact, often in enclosed spaces, and for prolonged periods of time. These include large cultural venues such as libraries, museums, and entertainment venues (such as bars, nightclubs, karaoke outlets, cinemas, theatres, indoor and outdoor attractions).<sup>(66)</sup> NIPH has advised a physical distance of 1 metre in hospitality settings, where possible. Risk mitigation strategies should be used in locations where physical distancing is particularly challenging.<sup>(36)</sup> The Government of Australia recommends a distance of 1.5 metres in accommodation settings (such as hotels, hostels, camping sites and caravan parks).<sup>(38)</sup> Public Health England (PHE) recommends that those working in hotels and other guest accommodation maintain appropriate physical distancing, with reference to guidelines for the general public, but a specific distance is not outlined.<sup>(5)</sup>

### *Events and gatherings*

Interim guidance from the WHO does not specify a recommended physical distance at mass gatherings, although the guidance does state that the risk of transmission is increased during close contact (less than 1 metre).<sup>(59)</sup> NIPH advises that the 1 metre distance rule applies for people who are not in the same household or equivalent close contact circle.<sup>(33)</sup> Certain groups (for example, performers in cultural activities, top athletes performing in sports events, or summer camps) may be exempt from physical distancing recommendations. FOPH has recommended that a minimum distance of 1.5 metres is maintained between individuals or groups of people (that is, families or those living in the same household) at events.<sup>(23)</sup> The Government of Australia recommends a distance of 1.5 metres during gatherings,<sup>(38)</sup> although current advice from the AHPPC states that mass gatherings should be avoided. Large crowds and gatherings greatly increase the risk of infection, as the ability to maintain physical distancing is reduced.<sup>(74)</sup> During phase two of reopening in Singapore, the reopening of large scale venues or events, such as conferences, exhibitions, concerts and trade fairs has not yet been recommended.<sup>(66)</sup>

The Government of Canada has developed a risk mitigation tool for events and gatherings, which outlines that gatherings or events with a higher number of contacts are presumed to have greater risk of transmission, and that the risk is increased when attendees are within 2 metres of each other.<sup>(47)</sup> At present, larger gatherings or events (with over 250 attendees) are not envisaged to occur until significant population immunity has been achieved and public health restrictive measures can be lifted.<sup>(47)</sup>

### *Weddings, religious ceremonies and gatherings*

FOPH recommends that a distance of 1.5 metres is maintained at religious services and gatherings, where possible.<sup>(23)</sup> In general, the Ministry of Culture, Community and Youth in Singapore recommends a distance of 1 metre between individuals or groups (of no more than five people) during religious ceremonies. In some circumstances, a greater distance of 2 metres is advised (for example, for those who are unmasked for speaking or singing).<sup>(48)</sup> The Government of Australia recommends maintaining a distance of 1.5 metres at weddings, funerals and religious services, where possible.<sup>(38)</sup>

### *Workplaces and businesses*

The WHO recommends the use of measures to keep a distance of at least 1 metre between people and avoid direct physical contact with other persons (that is, hugging, touching, shaking hands), strict control over external access and queue management (marking on the floor, barriers).<sup>(56)</sup> It is recommended that the density of people in the building is reduced to allow physical spacing of at least 1 metre. Where the physical distancing of at least 1 metre cannot be implemented in full in

relation to a particular activity, workplaces should take all the mitigating actions possible to reduce the risk of transmission.

The Government of Canada and HPS have advised that a physical distance of 2 metres should be maintained in workplaces outside the health and social care setting, with the use of visual cues such as floor markings to encourage a 2 metre separation.<sup>(15, 25, 45)</sup> HPS recommends that a risk assessment should be undertaken, and in circumstances where 2 metre physical distancing cannot be maintained, policies and practices should be adapted to minimise the risk of transmission.<sup>(15)</sup> The CDC recommends that workers should avoid being in close contact (within 6 feet) in the workplace.<sup>(64)</sup> The Government of Australia and FOPH recommend a distance of 1.5 metres in the workplace.<sup>(23, 38)</sup> In addition, the recommendation to work from home, where possible, has been lifted by FOPH.<sup>(75)</sup> NIPH recommends a distance of 1 metre between employees, in addition to risk mitigation strategies.<sup>(32)</sup>

PHE recommend a distance of 2 metres for the vast majority of businesses and workplaces, where possible. In selected settings such as bars, restaurants and close contact services (for example, hairdressers), a distance of 1 metre in addition to risk mitigation strategies is considered sufficient.<sup>(4, 11)</sup>

Overall, the guidance recommends that in circumstances where physical distancing recommendations cannot be consistently maintained, additional context-specific risk mitigation strategies should be employed to reduce the risk of transmission. Sector-specific guidance, where published, is outlined in Appendix 1.

**Table 1 Public health guidance measures for physical distancing.**

Country or region	Advising body	General Public	Education and childcare facilities	Workplaces	Food and beverage industry	Retail industry	Outdoor or sporting activities	Public transport	Events	Religious ceremonies
International guidance	WHO	1 metre <sup>†</sup>	1 metre <sup>†</sup>	1 metre <sup>†</sup>	-	-	-	-	-	-
Europe	ECDC	-	-	-	-	-	-	1 metre <sup>†</sup>	-	-
United States	CDC	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>	6 feet <sup>†</sup>
England	PHE and collaborators	2 metres <sup>†</sup>	2 metres <sup>†</sup>	1-2 metres <sup>†</sup>	1-2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	-	-
Scotland	HPS	2 metres <sup>†</sup>	-	2 metres <sup>†</sup>	-	-	-	2 metres <sup>†</sup>		
Northern Ireland	PHA of Northern Ireland	2 metres <sup>†</sup>	0-2 metres <sup>  </sup>	-	-	-	-	-	-	-
Norway	NIPH	1 metre	Varies depending on setting and risk level <sup>‡</sup>	1 metre <sup>†</sup>	-	1 metre	1-2 metres	-	1 metre <sup>§</sup>	-
Switzerland	FOPH and collaborators	1.5 metres <sup>†</sup>	1.5 metres <sup>†</sup>	1.5 metres or a suitable physical barrier	1.5 metres or a suitable physical barrier	-	1.5 metres <sup>†</sup>	2 metres <sup>†</sup>	1.5 metres <sup>†</sup>	-
Australia	Department of Health and collaborators	1.5 metres	1.5 metres (adults)	1.5 metres	1.5 metres	1.5 metres	1.5 metres <sup>†</sup>	-	1.5 metres	-

Country or region	Advising body	General Public	Education and childcare facilities	Workplaces	Food and beverage industry	Retail industry	Outdoor or sporting activities	Public transport	Events	Religious ceremonies
New Zealand	Ministry of Health	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary	No longer considered necessary
Canada	Government of Canada	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	2 metres <sup>†</sup>	-	-
Singapore	Ministry of Health and collaborators	1 metre <sup>†</sup>	1-2 metres <sup>†</sup>	1 metre <sup>†</sup>	1 metre <sup>†</sup>	1 metre <sup>†</sup>	2-3 metres <sup>†</sup> <sup>†</sup>	-	-	1-2 metres <sup>†</sup>

**Key:** CDC - Centers for Disease Control and Prevention; ECDC - European Centre for Disease Prevention and Control; FOPH -Federal Office of Public Health; HPS - Health Protection Scotland; NIPH - Norwegian Institute of Public Health; PHA - Public Health Agency; PHE -Public Health England; WHO - World Health Organisation.

- Denotes that no specific guidance has been issued. Individuals or groups in these settings are expected to observe physical distancing guidance in line with recommendations for the general public.

† The guidance specifies that additional risk mitigation measures should be taken to encourage adherence to physical distancing, or in circumstances where physical distancing cannot be consistently maintained.

‡ A traffic light model has been developed to provide guidance on physical distancing and other protective measures in different education and childcare settings, at different levels of risk.

§ Individuals or groups may be exempt from physical distancing in some circumstances.

||Adults are advised to maintain a physical distance of 2 metres where possible. Physical distancing guidance for children varies depending on the age and needs of the child.

## **2. Risk assessment tools or frameworks**

A limited number of countries have developed or are using risk assessment tools or frameworks to determine if and how physical distancing requirements can be varied depending on the setting. The Government of Canada has developed a risk assessment framework to determine the risk of transmission (that is high, medium or low risk) for a particular setting. The risk assessment framework is used to determine the suitability for the reopening of a particular setting and the extent of risk mitigation strategies that are needed in that setting. The framework has not been used to determine if physical distancing measures can be varied depending on the outcome of the assessment.<sup>(45)</sup> Essential components to risk-based assessments of non-health or social care associated workplaces have also been developed by HPS.<sup>(15)</sup>

Three risk assessment tools were identified for use in education and childcare settings. NIPH, in collaboration with the Department of Education and Training, has developed a tool outlining the recommended infection control guidelines based on the risk of transmission as determined by the general contagion situation in Norway.<sup>(30)</sup> Risk mitigation tools for use in child and youth settings have also been developed by the Government of Canada and the WHO.<sup>(57, 69)</sup>

The COVID-19 alert system in New Zealand has been used to vary physical distancing requirements by setting, according to the perceived level of risk.<sup>(44)</sup>

A risk mitigation tool for planning and organising events or gatherings has been developed by the Government of Canada.<sup>(47)</sup>

### *Community settings*

The Government of Canada has developed a framework for risk assessment and mitigation in community settings during the COVID-19 pandemic.

The three-step process involves:

1. An assessment of risk level
2. An assessment of risk mitigation potential
3. A matrix to determine the overall risk.

The risk assessment tool outlines the characteristics of settings and individuals in a particular setting at different risk levels (that is, low, medium and high risk) and can be used to determine the risk of transmission associated with a particular setting (Appendix 2, Table 1).<sup>(45)</sup> Step two involves assessing the risk mitigation potential of a particular setting based on the types of controls that can be used to mitigate the risk of COVID-19 spread within the setting. The mitigation potential is based on the modified hierarchy of controls, in which measures are considered from more protective to less protective in the following order: physical distancing, engineering controls, administrative controls, and personal protective equipment (PPE) and non-

medical masks (NMM) (Appendix 2, Table 2).<sup>(45)</sup> Finally, a risk matrix is used to determine a composite result that suggests the suitability of the mitigations identified to adequately mitigate risk (Appendix 2, Table 3).<sup>(45)</sup> An assessment of the overall risk should be interpreted with consideration of other contextual factors that may not be captured by the framework, such as economic and social wellbeing in a community.

HPS also outlines the need for a risk-based approach to minimise the risk of transmission in non-healthcare settings. The HPS tool outlines essential elements for consideration in risk-based assessments in all workplace settings outside of health and social care (Appendix 3).<sup>(15)</sup>

### *Education and childcare settings*

NIPH, in collaboration with the Department of Education and Training, has developed a traffic light system with a green, yellow and red level, to indicate which infection control measures kindergartens and schools should follow.<sup>(37)</sup> The model is intended to be used as a flexible tool to make it possible to plan for longer-term. Using this model, recommended safe distancing measures can be varied depending on the age group of the children (Appendix 4).

- At the green level, kindergarten and school life can be organised as normal with the ordinary organisation of departments and classes.
- At the yellow level (current level), entire departments and school classes can be counted as a cohort. Kindergartens and schools still need to take several measures to reduce contact and keep a physical distance between staff and students.
- At the red level, students and children should be divided into smaller groups and cohorts. Kindergartens and schools need to assess different attendance times for students and ensure that students and staff stay apart.

The Government of Canada has developed a risk mitigation tool for child and youth settings operating during the COVID-19.<sup>(69)</sup> The tool is intended to assist school boards and operators in child and youth settings when considering the risks to children/youth, staff and volunteers during the COVID-19 pandemic, and provides examples of strategies that may be implemented to mitigate potential risks (such as promoting the use of good hygiene practices). The guidance acknowledges the challenges associated with providing safe care to younger people due to the variation in health, age, ability, or other socio-economic and demographic circumstances faced by some individuals and groups which may limit their ability to follow the recommended measures. As a result, the responses and recommendations might need to be adapted in some situations.

Guidance from the WHO in relation to school-related settings in the context of COVID-19 lists key considerations for decision-makers and educators on how or when to reopen or close schools and suggests strategies and adaptations that should be in place for reopening of schools.<sup>(57)</sup>

### *New Zealand COVID-19 Alert System*

New Zealand's four level alert system specifies measures to be taken against COVID-19 at each alert level, with different physical distancing guidance recommended for different settings (that is, controlled versus uncontrolled settings) depending on the perceived level of risk.<sup>(44)</sup> Guidelines for businesses and services at the current alert level (alert level 1) is available on the Ministry of Health website. Information regarding the specific guidance at other alert levels has been removed to ensure consistent messaging to the public, however, an overview of the alert system is available on the government's COVID-19 website.<sup>(44)</sup>

Supermarkets, retail stores, shopping malls, takeaway-only food outlets are considered 'uncontrolled' settings as people have open access to the premises and generally don't know each other and are unlikely to be in close contact with each other for an extended period of time. 'Controlled' settings include public and private venues, schools, workplaces, museums, swimming pools, galleries, cinemas, stadiums, conference facilities and casinos. Physical distancing guidance at the various alert levels is available in Appendix 5.

### *Events or gatherings*

The Government of Canada has developed a risk mitigation tool to assist individuals, groups, or organisations in considering risks related to planning, organising or operating gatherings or events during the COVID-19 pandemic.<sup>(47)</sup> The guidance outlines a series of questions for event organisers to consider, as well as examples of measures that may be implemented to mitigate potential risks of the spread of COVID-19 (for example, promotion of physical distancing, creating physical barriers, increasing ventilation).<sup>(47)</sup>

## **3. Guidance on physical distance in the identification of close contacts during contact tracing**

Contact tracing is the process of identifying, assessing, and managing those who have been exposed to a disease to prevent onward transmission.<sup>(60)</sup> According to the WHO, contact tracing will break the chains of transmission when systematically applied and is thus an essential public health tool for controlling infectious disease outbreaks. Interim guidance from the WHO recommends that contact tracing efforts should aim to identify those who were less than 1 metre or in frequent contact with a confirmed case of COVID-19, in addition to other considerations including the setting, the nature of the contact (direct or indirect) and the duration of contact.<sup>(60)</sup> Specific guidance for identifying close contacts in different settings (such as household and community or social settings, closed settings, healthcare settings, public transport) is outlined in the guidance document.<sup>(60)</sup> The ECDC has advised a distance of 2 metres for the identification of both high and low risk contacts of probable or confirmed COVID-19 cases.<sup>(62)</sup>

The CDC, the Government of Canada, NIPH and the Ministry of Health in New Zealand outline that close contact with a confirmed case of COVID-19 must occur within 2 metres (or 6 feet) of the infected case, in addition, to a requirement for the duration of contact to be prolonged (that is, at least 15 to 30 minutes of exposure).<sup>(29, 43, 46, 63)</sup> The physical distance measurement used in contact tracing in guidance from the PHA of Northern Ireland, PHE and HPS ranges from 1 to 2 metres.<sup>(14, 16, 22)</sup> Some guidance documents also consider the duration of contact, the setting, the nature of the contact (that is, direct or indirect) or the timing of the contact during the confirmed cases clinical course of the disease.

NIPH and HPS differentiate between different types of close contacts by classifying contacts as household, or non-household contacts. Guidance from NIPH recommends carrying out contact tracing for all household members or equivalent close contacts, irrespective of physical distance. Other close contacts should be followed up if the contact was closer than 2 metres.<sup>(76)</sup> No physical distance is included in the definition of household contacts from the HPS.<sup>(16)</sup> For non-household contacts, direct contacts who have had contact within 1 metre of a confirmed case are considered at risk. Proximity contacts are those that have been between 1 and 2 metres of someone who has tested positive for COVID-19 for more than 15 minutes. Specific guidance is presented for airline contacts.<sup>(16)</sup> The definition of close contacts in the guidance for contact tracing in complex settings (for example, healthcare settings, prisons, educational establishments, homeless shelters) is consistent with the general guidelines.<sup>(17)</sup>

The Australian Department of Health does not define a physical distance at which a person is considered at risk of exposure to SARS-CoV-2. The definition of close contacts is based on the timing and setting of the possible exposure.<sup>(41)</sup> However, the COVIDSafe App has been developed to allow Australian state and territory health officials to contact people if they have been in contact with someone with COVID-19. A distance of 1.5 metres is used for contact tracing on the App.<sup>(77)</sup> Similarly, FOPH defines a close contact as being less than 1.5 metres away from someone infected with SARS-CoV-2 in the guidance document and on the App.<sup>(28, 78)</sup> Guidance from the PHA in Northern Ireland and FOPH specifies that contact must have occurred without any personal protection.<sup>(22, 28)</sup> Guidance from the Ministry of Health in Singapore does not specify a duration or distance in the definition of a close contact.<sup>(55)</sup>

The Canadian Government categorises contacts by exposure risk level. High risk contacts are those that were within 2 metres of a probable or confirmed case for more than 15 minutes, medium risk non-close contacts are those that were not within 2 metres of a case, and low risk contacts only had transient interactions with a case. Isolation advice and the associated public health authority actions are defined for each risk level.<sup>(46)</sup> Casual or transient contacts are not followed up based on the guidance provided by the Ministry of Health in New Zealand and the Ministry of Health in Singapore.

**Table 2 Definition of contacts used in contact tracing internationally.**

Country or region	Advising body	Definition of higher risk contact	Definition of lower risk contact	Subsequent monitoring dependent on contact level of exposure
<b>International guidance</b>	WHO	Anyone with the following exposures to a COVID-19 case, from 2 days before to 14 days after the case's onset of illness: <ul style="list-style-type: none"> <li>• Being within <b>1 metre</b> of a COVID-19 case for &gt;15 minutes</li> <li>• Direct physical contact with a COVID-19 case</li> <li>• Providing direct care for patients with COVID-19 disease without using proper personal protective equipment (PPE).</li> </ul>	Not defined	NA
<b>Europe</b>	ECDC	High-risk exposure (close contact)  A person: <ul style="list-style-type: none"> <li>• having had face-to-face contact with a COVID-19 case <b>within 2 metres</b> for more than 15 minutes</li> <li>• having had physical contact with a COVID-19 case</li> <li>• having unprotected direct contact with infectious secretions of a COVID-19 case (e.g. being coughed on)</li> <li>• who was in a closed environment (e.g. household, classroom, meeting room, hospital waiting room, etc.) with a COVID-19 case for more than 15 minutes</li> <li>• in an aircraft, sitting within 2 seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated (if severity of symptoms or movement of the case indicate more extensive exposure, passengers seated in the entire section or all passengers on the aircraft may be considered close contacts)</li> <li>• healthcare worker or other person providing care to a COVID-19 case, or laboratory workers handling specimens from a COVID-19 case, without recommended PPE or with a possible breach of PPE.</li> </ul>	Low-risk exposure  A person: <ul style="list-style-type: none"> <li>• having had face-to-face contact with a COVID-19 case <b>within 2 metres</b> for less than 15 minutes</li> <li>• who was in a closed environment with a COVID-19 case for less than 15 minutes</li> <li>• travelling together with a COVID-19 case in any mode of transport*</li> <li>• healthcare worker or other person providing care to a COVID-19 case, or laboratory workers handling specimens from a COVID-19 case, wearing the recommended PPE.</li> </ul>	The level of exposure, determines the type of management and monitoring.
<b>United States</b>	CDC	A close contact is defined as any individual who was <b>within 6 feet</b> of an infected person for at least 15 minutes starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to positive specimen collection) until the time the patient is isolated.	Not defined	NA

<p><b>England</b></p>	<p>Public Health England</p>	<p>A 'contact' is a person who has been close to someone who has tested positive for COVID-19 anytime from 2 days before the person was symptomatic up to 7 days from onset of symptoms (this is when they are infectious to others). For example, a contact can be:</p> <ul style="list-style-type: none"> <li>• people who spend significant time in the same household as a person who has tested positive for COVID-19</li> <li>• sexual partners</li> <li>• a person who has had face-to-face contact (<b>within 1 metre</b>), with someone who has tested positive for COVID-19, including:             <ul style="list-style-type: none"> <li>○ being coughed on</li> <li>○ having a face-to-face conversation <b>within 1 metre</b></li> <li>○ having skin-to-skin physical contact, or</li> <li>○ contact <b>within 1 metre</b> for one minute or longer without face-to-face contact</li> </ul> </li> <li>• a person who has been <b>within 2 metres</b> of someone who has tested positive for COVID-19 for more than 15 minutes</li> <li>• a person who has travelled in a small vehicle with someone who has tested positive for COVID-19 or in a large vehicle or plane near someone who has tested positive for COVID-19.</li> </ul>	<p>Not defined</p>	<p>NA</p>
<p><b>Scotland</b></p>	<p>Health Protection Scotland</p>	<p>Household contact:</p> <ul style="list-style-type: none"> <li>– Those that are living in the same household as a case e.g. those that live and sleep in the same home, or in shared accommodation such as university accommodation that share a kitchen or bathroom.</li> <li>– Those that have spent a significant time in the home (cumulatively equivalent to an overnight stay and without social distancing e.g. 8 hours or more) with a case during the exposure period</li> <li>– Sexual contacts</li> <li>– Cleaners (without protective equipment) of household settings during the exposure period, even if the case was not present at the time.</li> </ul> <p>Non-household contact:</p> <ul style="list-style-type: none"> <li>• Direct contact:             <ul style="list-style-type: none"> <li>– Face to face contact with a case for any length of time, <b>within 1m</b>, including being coughed on, a face to face conversation, unprotected physical contact (skin to skin). This includes exposure <b>within 1 metre</b> for 1 minute or longer without face-to-face contact.</li> </ul> </li> </ul>	<p>Not defined</p>	<p>NA</p>

		<ul style="list-style-type: none"> <li>- A person who has travelled in a small vehicle (e.g. car or van) with someone who has tested positive for coronavirus (COVID-19) or in a large vehicle near someone who has tested positive for coronavirus (COVID-19).</li> <li>• Proximity contact: Extended close contact (<b>between 1 and 2 metres</b> for more than 15 minutes) with a case. The duration of contact should be considered cumulatively over the infectious period (48 hours prior to symptom onset, or positive test if the case is asymptomatic, for 7 days from the date of symptom onset, or positive test if the case is asymptomatic).</li> <li>• Airline contacts:             <ul style="list-style-type: none"> <li>- International flights from countries exempt from UK border rules and local flights - passengers sitting within 2 seats in every direction of a case (i.e. the 2 seats either side, and then 2 rows in front and behind these seats) and cabin crew serving the area where the case was seated.</li> <li>- International travellers from non-exempt countries who are subject to UK Border Force measures following arrival in the UK will require contact tracing follow up using this guidance if they were sitting within 2 seats in every direction of a case (i.e. the 2 seats either side, and then 2 rows in front and behind these seats). This would also apply to cabin crew who were serving the area where a case was seated.</li> </ul> </li> </ul>		
<b>Northern Ireland</b>	PHA of Northern Ireland	<ul style="list-style-type: none"> <li>• People you spend 15 minutes or more with at a distance of <b>less than 2 metres.</b></li> <li>• People you have direct contact with, such as sexual partners, household members or people with whom you have had face-to-face conversations at a distance <b>of less than 1 metre.</b></li> </ul> <p>The contact must have taken place between 2 days before and up to 7 days after symptoms appeared.</p> <p>To be considered at risk the person will have to have been in close contact with a confirmed case without any personal protection.</p>	Not defined	NA
<b>Norway</b>	NIPH	People who have been in close contact with a person with confirmed COVID-19 disease from 48 hours before symptom onset and until that person comes out of isolation.	Not defined	NA

		<p>Household members or equivalent close contacts:</p> <ul style="list-style-type: none"> <li>live in the same household</li> <li>have had similar close contact as someone in a household (examples can include, boyfriend/girlfriend, nearby work colleagues in an open plan office, same cohort in childcare centre or school (up to and including 4th grade)</li> <li>have cared for, or had similar close contact, with a person with confirmed COVID-19, without using the recommended protective equipment.</li> </ul> <p>Other close contacts:</p> <ul style="list-style-type: none"> <li>Indoors: <b>closer than 2 metres</b> for more than 15 minutes continuously with a person with confirmed COVID-19 disease</li> <li>Outdoors: <b>closer than 2 metres</b> for more than 15 minutes continuously, face-to-face, with a person with confirmed COVID-19 disease</li> <li>Have been in direct physical contact with (e.g. shaken hands) with a person with confirmed COVID-19 disease.</li> </ul>		
Switzerland	FOPH and The Swiss Federal Council	<p>Close contact means that you were <b>less than 1.5 metres</b> away from someone infected with coronavirus without any form of protection (e.g. face mask or partition). The longer you are in contact with someone who is infected, the greater the risk of infection.</p> <p>SwissCovid app: Records any encounters that it has with other phones (<b>closer than 1.5 metres</b> and for longer than 15 minutes in any one day), as these are the situations in which you are most likely to become infected with the virus.</p>	Not defined	NA
Australia	Department of Health	<p>A close contact is defined as requiring:</p> <ul style="list-style-type: none"> <li>face-to-face contact in any setting with a confirmed or probable case, for greater than 15 minutes cumulative over the course of a week, in the period extending from 48 hours before onset of symptoms in the confirmed or probable case, or</li> <li>sharing of a closed space with a confirmed or probable case for a prolonged period (e.g. more than 2 hours) in the period extending from 48 hours before onset of symptoms in the confirmed or probable case.</li> </ul> <p>COVIDSafe App:</p>	Not defined	NA

		Close contact is a person within approximately <b>1.5 metres</b> for 15 minutes or more.		
<b>New Zealand</b>	Ministry of Health	<p>Close contact: Any person with the following exposure to a suspect, confirmed or probable case during the case’s infectious period, without appropriate personal protective equipment (PPE):</p> <ul style="list-style-type: none"> <li>• direct contact with the body fluids or the laboratory specimens of a case</li> <li>• presence in the same room in a health care setting when an aerosol-generating procedure is undertaken on a case</li> <li>• living in the same household or household-like setting (e.g. shared section of a hostel) with a case</li> <li>• face-to-face contact in any setting <b>within 2 metres</b> of a case for 15 minutes or more</li> <li>• having been in a closed environment (e.g. a classroom, hospital waiting room, or conveyance other than aircraft) <b>within 2 metres</b> of a case for 15 minutes or more or in a higher-risk closed environment for 15 minutes or more as determined by the local Medical Officer of Health<sup>†</sup></li> <li>• having been seated on an aircraft <b>within 2 metres</b> of a case (for economy class this would mean 2 seats in any direction including seats across the aisle, other classes would require further assessment)</li> <li>• aircraft crew exposed to a case (a risk assessment conducted by the airline is required to identify which crew should be managed as close contacts).</li> </ul>	Casual contact: Any person with exposure to the case who does not meet the criteria for a close contact.	Only close contacts are contacted during contact tracing.
<b>Canada</b>	Government of Canada	<p>A high-risk close contact is defined as a person who:</p> <ul style="list-style-type: none"> <li>• provided direct care for the case, including healthcare workers, family members or other caregivers, or who had other similar close physical contact (e.g., intimate partner) without consistent and appropriate use of personal protective equipment, OR</li> <li>• lived with or otherwise had close face-to-face contact (<b>within 2 metres</b>) with a probable or confirmed case for more than 15 minutes (may be cumulative, i.e., multiple interactions) up to 48 hours prior to symptom onset, or</li> <li>• had direct contact with infectious body fluids of a probable or confirmed case (for example, was coughed or sneezed on) while not wearing the recommended PPE.</li> </ul>	<p>Medium-risk non-close contact:</p> <ul style="list-style-type: none"> <li>• provided direct care for the case, (including health care workers, family members or other caregivers) or who had other similar close physical contact with consistent and appropriate use of personal protective equipment, or</li> <li>• who lived or otherwise had prolonged contact but <b>was not within 2 metres</b> of a case up</li> </ul>	High-risk close contacts are advised to self-isolate. Public health authorities are advised to conduct an individual risk assessment and actively monitor contacts for symptoms.

			<p>to 48 hours prior to symptom onset or while the case was symptomatic and not isolating.</p> <p>Low/No known risk – only transient interactions</p> <ul style="list-style-type: none"> <li>Only transient interactions (e.g., walking by the case or being briefly in the same room) or unknown but possible transient interaction due to the occurrence of local community transmission.</li> </ul>	<p>Medium risk contacts are advised to self-monitor for 14 days, avoid contact with individuals at risk of complications from infection, and follow the guidance for the general public. Public health authorities are advised to conduct a risk assessment, if feasible.</p> <p>Low-risk contacts are advised to follow the guidance for the general public. Public health authorities are advised to provide information and advice if necessary.</p>
<b>Singapore</b>	Ministry of Health	<p>Close contacts are defined as:</p> <ul style="list-style-type: none"> <li>anyone who had provided care for or has had close physical contact with the patient;</li> <li>anyone who had stayed at the same place as a confirmed case.</li> </ul>	<p><i>Transient contacts</i> can be described as anyone who had interacted with the confirmed case for short periods of time, such as passing by each other in the corridor or being on the same public transport or in the same public spaces.</p> <p>The risk of infection from transient contact is assessed to be low.</p>	<p>The health status of all close contacts will be monitored closely for 14 days from their last exposure to the patient.</p> <p>Transient contacts are not actively monitored.</p>

**Key:** CDC - Centers for Disease Control and Prevention; ECDC - European Centre for Disease Prevention and Control; FOPH -Federal Office of Public Health; HPS - Health Protection Scotland; NIPH - Norwegian Institute of Public Health; PHA - Public Health Agency; PHE -Public Health England; PPE – personal protective equipment; WHO - World Health Organisation

\* Except if sitting in an aircraft.

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† The local Medical Officer of Health will determine whether an environment is higher-risk. Considerations include the nature of the gathering, the level of contact between individuals and the ability to observe physical distancing or hygiene measures

## **Conclusion**

Of the countries considered in this review, physical distancing guidance is still in place in all countries, with the exception of New Zealand. The majority of public health bodies recommend maintaining 2 metres physical distance for the general public where possible, while public health bodies in Norway and Singapore have advised that people should aim to maintain a physical distance of 1 metre. Most guidelines recommend consistent physical distancing measures across all settings. However, Public Health England (PHE) has issued guidance recommending that a distance of 1 metre, in addition to risk mitigation measures, may be acceptable in certain settings where it is not possible to maintain a distance of 2 metres, similar to guidance issued by the New Zealand Ministry of Health at alert level 2. In Ireland, the government public health advice recommends keeping a 2 metre safe distance between individuals, where possible.<sup>(79)</sup> Guidance issued by Fáilte Ireland on 17 June 2020 recommends that, where possible, a physical distance of 2 metres should be maintained. However, in controlled environments such as pubs, bars, gastropubs, restaurants and cafés, the physical distance can be reduced to a minimum of 1 metre if the risk mitigation requirements outlined in the guidance document have been followed.<sup>(80)</sup> A report on the planned reopening of schools published by Department of Education and Skills found that a full reopening of schools to all students would not be possible with 1 or 2 metre physical distancing restrictions for students. At primary level, a requirement for 2 metre physical distancing in the classroom would result in almost all students attending school 1 day a week. At post-primary level, 2 metre physical distancing in the classroom would result in most pupils attending school 2 days a week. One metre physical distancing would result in increased attendance, however this would still be below the normal level. For primary school students, 1 metre in the classroom would result in 50% attendance at school for almost all pupils. At post primary level, 1 metre physical distancing in the classroom would result in some year groups attending school 50% of the time, and other year groups attending school at or near a full-time basis. The report notes that the impact of these restrictions on the education and well-being of students would be considerable.<sup>(81)</sup>

Most guidance documents recommend that additional risk mitigation strategies should be implemented if physical distancing cannot be consistently maintained, such as adaptations to policies and practices, the use of physical barriers, or wearing PPE. Some guidance documents have also considered the context-specific risk and feasibility of physical distancing in certain settings. Increased physical distancing is recommended by NIPH and Sport Singapore for sporting activities which may result in increased exhalation by participants. Guidance from the Department of Health in Northern Ireland, the Government of Canada, NIPH and the Ministry of Education in Singapore acknowledges the challenges associated with physical distancing in

younger age groups in education and childcare facilities, and encourage that safe distancing is practiced, where possible.

A limited number of risk assessment tools or frameworks have been developed and are currently in use internationally to determine context-specific risks associated with different settings. As part of the COVID-19 alert system in New Zealand, the physical distancing guidance has varied depending on the categorisation of a particular setting as a 'controlled' or 'uncontrolled' environment. In Norway, an infection control tool has been developed for use in childcare and education settings, with particular consideration given to the age of the children in different settings. Other risk assessment tools identified in this review have not been used to vary physical distancing requirements in different settings.

For the purposes of contact tracing, physical distance is not considered in isolation. The duration, setting and use of PPE are also important considerations when determining a level of risk associated with a potential exposure. Public health guidance on the physical distance used to identify a potential exposure for the purposes of contact tracing ranges from 1 to 2 metres. Definitions from NIPH, Health Protection Scotland (HPS) and Ministry of Health Singapore consider the nature of the contact and the setting in which the contact occurred, placing less emphasis on the physical distance between potential contacts and the confirmed case of COVID-19. Current guidance from the Health Protection Surveillance Centre (HPSC) in Ireland recommends a physical distance of 2 metres for contact tracing purposes, although the guidance acknowledges that a distance of 1 metre is generally regarded as sufficient to minimise direct exposure to droplets.<sup>(82)</sup>

A systematic review investigating the effect of physical distancing on transmission found that physical distancing of at least 1 metre is strongly associated with protection, but distances of up to 2 metres might be more effective.<sup>(83)</sup> The optimum distance for avoiding person-to-person virus transmission is not yet known. Overall, based on this review of the international guidance, a distance of 1 metre is regarded as sufficient to minimise SARS-CoV-2 transmission in a small number of countries or settings, but many countries recommend a physical distance of 2 metres. For contact tracing purposes, a close contact definition outlining a physical distance of 1 to 2 metres is widely used by public health agencies and international bodies.

This review was correct on 25 June 2020 GMT 10.00. The measures identified in this review are subject to change as the situation and response to COVID-19 evolves.

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## ***Appendix 1 - Sector-specific physical distancing guidance in non-healthcare associated workplaces***

### *Workplaces or businesses with non-client-facing roles*

PHE recommends that distancing of 2 metres, or 1 metre with risk mitigation measures, should be maintained where possible in offices, contact centres or similar indoor environments,<sup>(7)</sup> laboratories and research facilities<sup>(8)</sup> factories, plants and warehouses<sup>(9)</sup> and construction and other outdoor work.<sup>(10)</sup> Where 2 metre physical distancing cannot be achieved (for example, due to the presence of fixed equipment in laboratory facilities), workplaces are advised to take all mitigating actions possible to reduce the risk of transmission. The Ministry of Health, Singapore has advised that employers should facilitate physical spacing of at least 1 metre apart between work stations. Employers must continue to ensure that there are no social gatherings between employees, and safe distancing of at least 1 metre is maintained at all times.<sup>(66)</sup> For critical work events that cannot be deferred, separation of at least 1 metre between participants should be maintained.

### *Vehicle-related work activities*

PHE has issued guidance for people who work in or from vehicles, including couriers, mobile workers, lorry drivers, on-site transit and work vehicles, field forces and similar.<sup>(2)</sup> Given the variation in the types of work activities included, the risk of transmission is likely to vary considerably between each of these functions. The guidance acknowledges that it will not always be possible to keep a distance of 2 metres inside vehicles. In some circumstances, 1 metre with risk mitigation where 2 metres is not viable is acceptable.<sup>(2)</sup> Many vehicle-related tasks (such as heavy deliveries, refuse collection) need more than one person to operate safely, and changing vehicle configurations to create more space may not be feasible. Mitigation measures should be devised where workers cannot maintain physical distancing guidance to minimise the risk of transmission.<sup>(2)</sup> NIPH recommends that taxi-drivers should take the necessary precautions to reduce the risk of transmission, but no minimum safe physical distance is outlined.<sup>(35)</sup>

### *Retail businesses and services*

PHE has issued advice to employers, employees and the self-employed in shops that 1 metre physical distancing with risk mitigation is sufficient in circumstances where 2 metre physical distancing is not possible. Two metre physical distancing should be maintained where possible, including while arriving at and departing from work, while in work and when travelling between sites.<sup>(3)</sup> Enterprise Singapore advises limiting the number of customers within the store to allow for the 1 metre spacing between customers and employees at all times.<sup>(52)</sup>

### *Shopping centres and individual retail outlets*

Enterprise Singapore advises that occupancy limits should facilitate safe physical distancing of at least 1 metre between individual customers (if they are alone), groups of customers (up to five persons) and personnel. Reasonable steps should be taken to ensure that delivery personnel observe at least 1 metre spacing at all times and do not cluster together.<sup>(52)</sup>

### *Working in other people's homes*

When working in, visiting or delivering to other people's homes, PHE has advised that a social distance of 2 metres, or 1 metre with risk mitigation, is observed, where possible. The guidance acknowledges that for providers of some in-home services, it will not always be possible to maintain a physical distance from customers. In such circumstances, extra attention needs to be paid to equipment, cleaning and hygiene to reduce risk.<sup>(6)</sup> HPS has advised that tradespersons carrying out essential repairs and maintenance work in people's homes should maintain a 2 metre distance from household occupants at all times.<sup>(15)</sup> NIPH has advised that effects should be made to minimise the risk of transmission, but no specific physical distancing measurement is outlined.<sup>(35)</sup>

### *Food and beverage establishments*

In food and beverage establishments operating for collection and or delivery, Enterprise Singapore has advised 1 metre physical distancing between personnel, individuals and groups should be maintained.<sup>(53)</sup> Groups must be limited to a maximum of five people, with at least 1 metre spacing between tables or groups.<sup>(53)</sup>

For restaurants offering takeaway or delivery, PHE has issued guidance recommending that 2 metres, or 1 metre with risk mitigation, physical distancing is maintained, wherever possible.<sup>(4)</sup> The guidance acknowledges the challenges that physical distancing guidelines present for activities necessitating the use of equipment such as sinks, hobs and ovens and recommends that consideration should be given to the use of cleanable panels to separate workstations in larger kitchens.<sup>(4)</sup> It is recommended that access to premises should be limited for people waiting for or collecting takeaways, and clear demarcation for 1.5 metre distances should be set out for customers queuing. Guidance from FOPH recommends that a distance of 2 metres between employees should be maintained where feasible.<sup>(24)</sup> If workstations are separated by suitable partitions, physical distancing guidance is no longer considered necessary. It is recommended that organisational measures (for example, food collection points) or risk mitigation strategies (for example, appropriate protective measures) are used to minimise the risk of transmission.<sup>(24)</sup>

## Appendix 2 – Risk Assessment Framework developed by the Government of Canada

### Step 1: Assess the risk level

Table 1. Tool to assess the risk level		
Risk level	Setting characteristics	Characteristics of individuals in the setting
<b>High</b>	<ul style="list-style-type: none"> <li>Individuals have interactions with many others in the setting</li> <li>Individuals have close contact (within 2 metres) with others</li> <li>Individuals have prolonged (i.e., &gt;15 minutes) interactions with others</li> <li>Individuals frequently have contact with potentially infectious high-touch surfaces (e.g., door handles, service counters, railings)</li> <li>The setting is a confined indoor space with no windows that can open</li> </ul>	<ul style="list-style-type: none"> <li>Most individuals are older adults or are known to have underlying medical or immune compromising conditions and are therefore at higher risk of severe illness</li> <li>Most individuals are considered essential workers and critical shortages in workforce or expertise could result if they contract COVID-19 at the setting</li> <li>Most individuals are visiting the setting from outside the community where it is located</li> <li>Few individuals are able to practice core personal practices</li> </ul>
<b>Medium</b>	<ul style="list-style-type: none"> <li>Individuals have/may have interactions with some others in the setting</li> <li>Individuals have/may have transient contact (within 2 metres for less than 15 minutes) with others when spending time in the setting</li> <li>Individuals have/may have contact with high-touch surfaces</li> <li>The setting is a confined indoor space, but has windows that can be opened</li> </ul>	<ul style="list-style-type: none"> <li>Some individuals may be older adults or are known to have underlying medical or immune compromising conditions and are therefore at higher risk of severe illness</li> <li>Some individuals are considered essential workers and critical shortages in workforce or expertise could result if they contract COVID-19 at the setting</li> <li>Some individuals are visiting the setting from outside the community where it is located</li> <li>Some individuals are able to practice core personal practices</li> </ul>

**Table 1. Tool to assess the risk level**

Risk level	Setting characteristics	Characteristics of individuals in the setting
<b>Low</b>	<ul style="list-style-type: none"> <li>• Individuals have few to no interactions with others in the setting</li> <li>• Individuals are mostly able to avoid prolonged (i.e. &gt;15 minutes) close contact (within 2 metres) with others in the setting</li> <li>• Contact with high-touch surfaces is infrequent</li> <li>• The setting is not a confined indoor space, or is outdoors</li> </ul>	<ul style="list-style-type: none"> <li>• Few individuals are older adults or are known to have underlying medical or immune compromising conditions and are therefore at higher risk of severe illness</li> <li>• Few individuals are visiting the setting from outside the community where it is located</li> <li>• Most individuals are able to practice core personal practices</li> </ul>

Note: There is currently insufficient evidence to define exposure risk by quantifying terms such as many vs. some vs. few, or frequently vs. sometimes vs. rarely.

General principles for interpreting the risk level include:

- Settings with a higher number of contacts are presumed to have greater risk.
- Settings with close and prolonged contact with others are presumed to have greater risk.
- Settings with a higher frequency of contact with high-touch surfaces (i.e. surfaces frequently touched by others) are presumed to have greater risk.
- Settings with a higher proportion of individuals that are vulnerable to severe illness are presumed to have greater risk in terms of impact on the population.
- Settings with a higher proportion of individuals visiting from outside the community (i.e., from outside the city, town, county, or First Nations, Inuit or Métis community) are presumed to be at greater risk in terms of introduction and geographic spread of the virus.

## Step 2: Assess the risk mitigation potential

<b>Table 2. Tool to assess the risk mitigation potential</b>				
	<b>Physical distancing</b>	<b>Engineering controls</b>	<b>Administrative controls</b>	<b>Personal protective equipment (PPE) and non-medical masks (NMM)</b>
<b>Descriptions of control categories</b>	Strategies to maintain a 2 metre distance between individuals and reduce time spent in close proximity	Strategies to create physical barriers between individuals and reduce exposure to common surfaces	Strategies to change to the way people interact with the setting in order to reduce risk (e.g., through changes to business policies or practices)	Equipment worn/used by a person to prevent spread of the virus
<b>Mitigation measures</b>	<ul style="list-style-type: none"> <li>• Close contact between people can be eliminated (e.g., teleworking, virtual services, contactless business model - delivery, curbside pickup)</li> <li>• The number of people that come into contact with another in the setting can be reduced (e.g., by restricting number of people in the setting)</li> <li>• Proximity of individuals can be reduced through physical separation (e.g.</li> </ul>	<ul style="list-style-type: none"> <li>• Physical barriers can be installed between individuals (e.g., plexiglass shield or high walled cubicle)</li> <li>• Windows can be opened or operations/activities can be moved outside.</li> <li>• The number of common surfaces that need to be touched can be reduced (e.g., doors propped open, no-touch waste containers)</li> <li>• Contactless payment methods can be offered, if possible.</li> <li>• Non-essential common areas can be closed</li> </ul>	<ul style="list-style-type: none"> <li>• The frequency of environmental cleaning can be increased, especially for high-touch surfaces</li> <li>• Shared equipment can be cleaned and disinfected before and after use</li> <li>• Absenteeism policies can be adjusted to enable employees to stay home when ill, in quarantine (self-isolation), or if they are taking care of children or someone who is ill</li> <li>• It is possible to stagger when people enter and exit the setting to reduce number of contacts (e.g., staggered start times at work, or spacing between booked appointments).</li> </ul>	<ul style="list-style-type: none"> <li>• PPE can be used appropriately as per usual practice or as recommended by the Occupational Health and Safety department or local PHA (e.g., if employees will be within 2 metres of others)</li> <li>• Individuals can wear NMMs in the setting when it is not possible to maintain a 2 metre physical distance from others</li> </ul>

**Table 2. Tool to assess the risk mitigation potential**

	Physical distancing	Engineering controls	Administrative controls	Personal protective equipment (PPE) and non-medical masks (NMM)
	<p>minimum 2 metres between desks, tables, counters, lineups)</p> <ul style="list-style-type: none"> <li>• Visual cues can be used to encourage a 2 metre distance (e.g. accessible signage, floor markings)</li> </ul>	<ul style="list-style-type: none"> <li>• Access to non-essential equipment can be restricted</li> <li>• Individuals can be isolated from others if they develop symptoms in the setting</li> </ul>	<ul style="list-style-type: none"> <li>• Contact duration can be reduced to less than 15 minutes by changing the way people interact in that setting</li> <li>• Gatherings that attract people from longer distances can be limited</li> <li>• Access to handwashing facilities can be increased (e.g. by placing hand sanitiser dispensers in prominent locations), ensuring accessibility for individuals with disabilities or other accommodation needs</li> <li>• Special accommodations for clients from vulnerable groups (e.g. dedicated shopping hours for seniors and people with immune compromising or underlying medical conditions) can be provided</li> <li>• It is possible to post accessible signage to discourage individuals who are ill from entering the setting</li> <li>• Individuals can be <a href="#">screened</a> for known symptoms of COVID-19</li> </ul>	

**Table 2. Tool to assess the risk mitigation potential**

	Physical distancing	Engineering controls	Administrative controls	Personal protective equipment (PPE) and non-medical masks (NMM)
			before entering the setting (i.e., actively or passively) <ul style="list-style-type: none"> <li>• Contact information for individuals in the setting can be collected so that they could be notified in the event of a known COVID-19 exposure</li> <li>• Tissues and no-touch waste containers can be provided to enable respiratory etiquette</li> </ul>	

**Table Footnote 1**

Categories of controls. The strength of controls and mitigation measures are considered stronger to weaker from left to right.

**Key:** NMM – non-medical mask; PPE – personal protective equipment.

Step 3: Consider next steps

		Risk mitigation potential (from Table 2)		
		Stronger	Moderate	Weaker
Risk level (from Table 1)	High	<b>Moderate risk</b> of contributing to COVID-19 community transmission. Increase or strengthen mitigation strategies if possible.	<b>Higher risk</b> of contributing to COVID-19 community transmission. Consider delaying reopening. Increase or strengthen mitigation strategies.	<b>Highest risk</b> of contributing to COVID-19 community transmission. Consider delaying reopening. Increase or strengthen mitigation strategies.
	Medium	<b>Lower risk</b> of contributing to COVID-19 community transmission. Maintain mitigation strategies.	<b>Moderate risk</b> of contributing to COVID-19 community transmission. Increase or strengthen mitigation strategies if possible.	<b>Higher risk</b> of contributing to COVID-19 community transmission. Consider delaying reopening. Increase or strengthen mitigation strategies.
	Low	<b>Lowest risk</b> of contributing to COVID-19 community transmission. Maintain mitigation strategies.	<b>Lower risk</b> of contributing to COVID-19 community transmission. Maintain mitigation strategies.	<b>Moderate risk</b> of contributing to COVID-19 community transmission. Increase or strengthen mitigation strategies if possible.

### ***Appendix 3 – Risk Assessment Tool for non-healthcare workplace settings outlined by Health Protection Scotland<sup>(15)</sup>***

It is essential that the clear recommendation of the 2 metre rule outlined in the physical distancing guidance is adhered to. For work designated as essential, there are however circumstances where the 2 metre rule cannot be followed despite all possible steps being taken to try to maintain this; in those circumstances a risk based approach should be used. A risk assessment should be conducted that considers the following aspects and the outcome should be documented:

- Is it an essential role (see key worker’s guidance)?
- Is the task being done essential?
- Is it essential that the task is done now or can it be deferred?
- Can the task be done in a different way so that 2m distance can be maintained?
  - Yes – do this and document a justification that describes why the process has changed from usual practice, make sure your usual health and safety considerations are applied.
  - No – then adapt the task to ensure physical distancing is adhered to as far as possible and document this.
    - Minimise the time spent at less than 2 metre
    - Maintain 2 metre distance for breaks and lunch
    - Maximise the distance, where the 2 metre distance cannot be kept, always ensure the greatest distance between people is maintained
  - Apply environmental changes to minimise contact such as physical barriers, markings or changing the placement of equipment or seating (e.g. a screen between staff and customers, or tape markings on the floor to show the 2 metre distance required).
  - Consider changes in working practices (stagger times at which work is done or breaks are taken; restructure work flows to allow for physical distancing to be implemented).
  - Ensure that good hygiene practices and all infection prevention and control measures are fully implemented.

## Appendix 4 – Classification of infection control measures in education and childcare settings developed by NIPH.<sup>(30)</sup>\*

Education or childcare setting	Green	Yellow	Red
<b>Kindergarten</b>	<ul style="list-style-type: none"> <li>■ No sick person should attend kindergarten</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between employees (hand greeting and shaking)</li> <li>■ Ordinary organization of departments</li> <li>■ Plan for normal daycare</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend kindergarten</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between employees (hand greeting and shaking)</li> <li>■ Entire departments are considered a cohort</li> <li>■ Regular employees per cohort</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Strive for distance between different cohorts.</li> <li>■ Divide outdoor areas to keep distance between cohorts</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend kindergarten</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between employees (hand greeting and shaking)</li> <li>■ Divide the children into smaller cohorts</li> <li>■ Regular employees per cohort</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Ensure distance between cohorts that do not cooperate</li> <li>■ Divide outdoor areas to keep distance between cohorts</li> <li>■ Consider alternating attendance times for children</li> </ul>
<b>Primary School</b>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Ordinary organisation of school classes and school life</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Whole school classes are considered a cohort</li> <li>■ Employees can switch between cohorts / classes</li> <li>■ Step-by-step cohorts at SFO</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Have separate areas in the school yard for different classes/cohorts during breaks free time</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Divide students into smaller cohorts</li> <li>■ Permanent teachers for each cohort as far as possible</li> <li>■ The same cohorts in school as at SFO</li> <li>■ Strive for distance between students / staff</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Have separate areas in the schoolyard for different classes/cohorts during breaks/free minutes to reduce contact between different cohorts</li> <li>■ Consider alternating attendance times for students</li> </ul>
<b>Junior</b>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> </ul>

	<ul style="list-style-type: none"> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Ordinary organization of school classes and school life</li> </ul>	<ul style="list-style-type: none"> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Whole school classes are considered a cohort</li> <li>■ Employees can switch between cohorts / classes, but should stay away from students as far as possible</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Keeping distance during breaks/free minutes</li> </ul>	<ul style="list-style-type: none"> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Divide students into smaller cohorts</li> <li>■ The cohorts should have regular classrooms</li> <li>■ Employees should come to the classroom</li> <li>■ Strive for <b>1 metre</b> distance between students / staff</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Keeping distance during breaks/ free minutes and avoid contact between different cohorts</li> <li>■ Consider alternating attendance times for students</li> </ul>
<p><b>High school</b></p>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Ordinary organisation of school classes and school life</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Whole school classes can have teaching together</li> <li>■ Pupils should have fixed spaces in each classroom or permanent partners / groups</li> <li>■ Employees can switch between classes, but should stay away from students as far as possible</li> <li>■ Outside the classroom, students and staff are encouraged to keep <b>1 metre</b> distance in all situations</li> <li>■ Avoid crowding and large gatherings</li> </ul>	<ul style="list-style-type: none"> <li>■ No sick person should attend school</li> <li>■ Good hygiene</li> <li>■ Avoid physical contact between people (hand greeting and shaking)</li> <li>■ Divide students into smaller groups</li> <li>■ <b>At least 1 metre</b> distance between students / staff in all situations</li> <li>■ Avoid crowding and large gatherings</li> <li>■ Consider alternating attendance times for students</li> </ul>

**Key:** NIPH – Norwegian Institute of Public Health; SFO - the before and after school program.

\*The information in this table has been translated using an online translation tool.

Appendix 5 - Overview of the New Zealand COVID-19 Alert System.<sup>(44)</sup>

Alert level	Description of alert level	Controlled settings	Uncontrolled Settings
<b>Level 1 - Prepare</b>	The disease is contained in New Zealand	<p><b>No requirement for physical distancing.</b></p> <p>Businesses may continue to adopt different ways of working to support physical distancing to help to minimise unnecessary close contact, where practical.</p>	<b>No requirement for physical distancing.</b>
<b>Level 2 - Reduce</b>	The disease is contained, but the risk of community transmission remains.	<p><b>1 metre in controlled environments</b> like workplaces, where practical.</p> <p>Public venues such as museums, libraries and pools can open if they comply with public health measures and ensure 1 metre physical distancing and record keeping.</p> <p>No more than 100 people at gatherings, including weddings, birthdays, funerals and tangihanga (traditional maori funeral)</p>	<b>2 metres in uncontrolled environments</b> like supermarkets, retail stores, shopping malls, takeaway-only food outlets or from strangers when out in public.
<b>Level 3 - Restrict</b>	High risk the disease is not contained.	<p><b>1 metre in controlled environments</b> like schools and workplaces.</p> <p>Schools between years 1 to 10 and Early Childhood Education centres can safely open but will have limited capacity. Children should learn at home if possible.</p> <p>People must work from home unless that is not possible.</p> <p>Businesses can open premises, but cannot physically interact with customers.</p> <p>Public venues are closed. This includes libraries, museums, cinemas, food courts, gyms, pools, playgrounds, markets.</p> <p>Gatherings of up to 10 people are allowed but only for wedding services, funerals and tangihanga.</p>	<b>2 metres in uncontrolled environments</b> outside the home including on public transport.
<b>Level 4 - Lockdown</b>	Likely that disease is not contained.	<p>Businesses closed except for essential services, such as supermarkets, pharmacies, clinics, petrol stations and lifeline utilities.</p> <p>All gatherings cancelled and all public venues closed.</p> <p>Educational facilities closed.</p>	Non-essential services closed.

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