Advice to the National Public Health Emergency Team

Reduction of the minimum age for the application of mask wearing requirements and recommendations – Update to advice submitted 3 March 2021

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About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA’s mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children, Equality, Disability, Integration and Youth, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.

- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children’s special care units.

- **Regulating health services** — Regulating medical exposure to ionising radiation.

- **Monitoring services** — Monitoring the safety and quality of health services and children’s social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.

- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.

- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland’s health and social care services.

- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.
Foreword

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a highly infectious virus resulting in over 100 million cases and three million deaths since its emergence in 2019. In the context of the ongoing COVID-19 pandemic, SARS-CoV-2 constitutes a significant public health concern due to its high basic reproduction rate, the limited evidence of effective treatment approaches, and the constrained supply of vaccines in the early stages of population-level immunisation programmes.

The National Public Health Emergency Team (NPHET) oversees and provides national direction, guidance, support and expert advice on the development and implementation of strategies to contain COVID-19 in Ireland. Since March 2020, HIQA’s COVID-19 Evidence Synthesis Team has provided research evidence to support the work of NPHET and associated groups and inform the development of national public health guidance. The COVID-19 Evidence Synthesis Team which is drawn from the Health Technology Assessment Directorate in HIQA, conducts evidence synthesis incorporating the scientific literature, international public health recommendations, and existing data sources as appropriate.

From September 2020, as part of the move towards a sustainable response to the public health emergency, HIQA provides evidence based advice in response to requests from NPHET. The advice provided to NPHET is informed by research evidence developed by HIQA’s COVID-19 Evidence Synthesis Team and with expert input from HIQA’s COVID-19 Expert Advisory Group (EAG). Topics for consideration are outlined and prioritised by NPHET. This process helps to ensure rapid access to the best available evidence relevant to the SARS-CoV-2 outbreak to inform decision-making at each stage of the pandemic.

The purpose of this report is to outline the advice provided to NPHET by HIQA regarding the reduction of the minimum age for the application of mask wearing requirements and recommendations. This report is an update of the advice submitted to NPHET on 3 March 2021. In the context of limited research evidence, the advice reflects the findings of a facilitated discussion with the HIQA COVID-19 EAG considering key issues regarding this policy question.

HIQA would like to thank its COVID-19 Evidence Synthesis Team, the members of the COVID-19 EAG and all who contributed to the preparation of this report.
Dr Máirín Ryan

Deputy CEO & Director of Health Technology Assessment

Health Information and Quality Authority
Acknowledgements

HIQA would like to thank all of the individuals and organisations who provided their time, advice and information in support of this work.

Particular thanks are due to the Expert Advisory Group (EAG) and the individuals within the organisations listed below who provided advice and information.

Membership of the Expert Advisory Group involves review of evidence synthesis documents and contribution to a discussion which informs the advice from HIQA to NPHET. It does not necessarily imply agreement with all aspects of the evidence synthesis or the subsequent advice.

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The advice is developed by the HIQA Evidence Synthesis Team with support from the Expert Advisory Group. Not all members of the Expert Advisory Group and Evidence Synthesis Team are involved in the response to each research question. The findings set out in the advice represent the interpretation by HIQA of the available evidence and do not necessarily reflect the opinion of all members of the Expert Advisory Group.

Conflicts of Interest

None declared.
Advice to the National Public Health Advisory Team

The purpose of this report is to provide advice to the National Public Health Emergency Team (NPHET) on the following policy question:

"Should the minimum age for the application of mask wearing requirements and recommendations be reduced?"

For the purposes of this advice document, the term ‘mask’ is interpreted as either a disposable medical or surgical type mask, or as a reusable fabric or cloth face covering. Unless otherwise stated, this advice does not pertain to respirator masks (for example FFP2 medical masks), face shields or face visors.

In the context of limited research evidence regarding a number of key factors to inform this policy question, the advice from HIQA is informed by the expert opinion of the HIQA COVID-19 Expert Advisory Group (EAG) following a facilitated discussion on the considerations identified.

This advice serves to update advice issued to NPHET on 3 March 2021 based on a facilitated discussion held on 2 March 2021. At that time, the advice noted the following:

"Given the emerging evidence regarding the importance of variants of concern to community-level transmission, this advice should be kept under review and should be informed by national and international surveillance data and relevant evidence from the literature”

As such, the COVID-19 EAG was reconvened to discuss this policy question on 6 April 2021. A number of presentations were delivered to provide updates on the evidence with respect to issues relating to this policy question, including:

- current requirements, recommendations and guidance with respect to face mask use in the community setting
- examples of international recommendations regarding the use of face masks by children
- current position with respect to SARS-CoV-2 variants of concern
- importance of the B.1.1.7 variant, and other variants of concern, to SARS-CoV-2 transmission in children
- epidemiological evidence regarding transmission in children
- evidence regarding the effectiveness of face masks in reducing transmission of SARS-CoV-2
consideration of potential benefits and harms that may be associated with the wearing of face masks by children

acceptability to relevant stakeholders, including, for example, children, parents and teachers, of a face mask requirement

feasibility of a face mask requirement for younger children

contextual considerations.

The key points from these presentations which informed HIQA's advice, are as follows:

**Current (as of 6 April 2021) requirements, recommendations and guidance**

- There have been no recent changes to the requirements, recommendations and guidance with respect to the use of face masks by children in Ireland; face masks or face coverings are not recommended for children under the age of 13, though children over the age of 13 are expected to follow the advice for adults.

**International recommendations regarding the use of face masks by children**

- As noted in the 2 March 2021 EAG meeting, international recommendations regarding face mask use in primary school aged children are highly varied in practice. Considering recent changes to recommendations since the March EAG meeting, Belgium has now extended the requirement for face masks to those aged 10 and 12 years when in school.

- Currently, schools are closed for the Easter break in many countries. The situation with respect to school reopening is dynamic, as several European countries are currently experiencing high levels of community transmission. Deterioration in the epidemiological situation has led to closure or a switch to online learning in a number of jurisdictions.

**Importance of variants of concern to transmissibility and to clinical outcomes within the overall population and within children specifically**

- As per the situation described within the 2 March 2021 EAG meeting, the main variants of concern within the Irish setting include B.1.1.7, B.1.351, and P.1, which have been associated with an increase in transmissibility. Surveillance data indicate that B.1.1.7 became the dominant variant in Ireland in January 2021. The prevalence of B.1.1.7 among cases was estimated to be approximately 25% on 30 December 2020; since 1 February 2021 the prevalence of B.1.1.7 has been approximately 90%.
• An increased risk of hospitalisation and or an increased risk of mortality associated with the B.1.1.7 variant in the general population in England has been reported in four studies published in March 2021. These observational studies analysed individual-level data and aimed to control for the effects of potential confounders by matching on or adjusting for demographic variables and variables relating to sampling dates and case locations. However, while robust methodology has been employed to explore the associations, it is possible that the effects observed in these studies could be explained by biases inherent in the data.

• Thus far, there is no early population-level signal in Irish data suggesting an increased risk of hospitalisation or mortality among B.1.1.7 cases in the general population, though more detailed work is underway to explore potential associations.

• With regard to children, there is no clear evidence in the scientific literature of a trend of increased transmissibility associated with the B.1.1.7 strain specifically in younger age groups relative to older age groups. Neither has there been evidence of a trend of poorer clinical outcomes among children associated with the B.1.1.7 variant.

  o Notwithstanding the above findings, it is noteworthy that where there is increased community transmission overall, this results in increased numbers of cases among children, and, therefore, increased morbidity and mortality within this age-group as within the overall population.

• Considering Irish data, there is no clear population-level signal as yet that the B.1.1.7 variant or the reopening of schools have been associated with a significant increase in incidence of SARS-CoV-2 in children. It was noted that incidence of SARS-CoV-2 in children appears to have stabilised over the two weeks leading up to the EAG meeting. Further nuances related to the data were noted as follows:

  o Due to selective under-ascertainment in children in January 2021 (likely due to the temporary suspension of asymptomatic close contact testing) the incidence rates observed in children during this time were likely underestimated.

  o While there was a four- to six-fold increase in referrals of children for testing in March 2021, the positivity rates for this time were low. This increase in referrals could be explained by various factors; these may include increased vigilance regarding COVID-19 symptoms in light of schools re-opening and the presence of other circulating respiratory viruses in children.
Epidemiological evidence regarding transmission patterns in the Irish school setting

- Where COVID-19 cases are observed in children within the school setting, the source of the majority of such cases is considered by public health to be the community as opposed to the school itself. Furthermore, little onward spread is observed within the school setting.

- Considering the most recent school reopening period (March 2021) and in which the B.1.1.7 variant has been the dominant strain circulating in the community, rates of test positivity among close contact pupils and staff have remained low and comparable to those rates observed in the latter part of 2020. Rates of test positivity among close contacts within the school setting (approximately 2%) remain substantially lower than rates of test positivity among close contacts within the general community setting (approximately 15%).

- Transmission within schools is best avoided through the use of layered mitigation measures. It is of critical importance to avoid attending school with symptoms without having consulted a GP. Other measures include physical distancing within schools, on schools grounds and when travelling to and from school, appropriate hand hygiene, cough etiquette, and increased ventilation of indoor spaces; no single measure is sufficient in isolation.

- It was emphasised that school classrooms appear to be a well-controlled low-risk environment for transmission of SARS-CoV-2. Higher risks of transmission have been associated with mixing of pupils during break times, and social interaction.

- There may be unintended consequences associated with use of face coverings in young children; particularly among very young children who have difficulty in correctly wearing face coverings. More touching of faces may occur, including by those supervising children (e.g. teachers) where they need to assist a child with a face covering; this may lead to closer contact and potentially touching of high risk secretions.

Effectiveness of face masks in reducing transmission of SARS-CoV-2

- As previously discussed in HIQA evidence summaries and advice on the topic of face mask use, there are challenges in identifying the effectiveness of a face mask intervention in the community setting.

- Regarding the evidence base for the effectiveness of face mask use in the community among the general population, this largely remains unchanged
since the 2 March 2021 EAG meeting, though an additional update to a 'living review' of face mask use in the community (Chou et al.) has been published and included a further observational study. As previously, this review concluded that the strength of the evidence base underlying the use of face masks in the community remains low.

- Four studies presented to the EAG and published in March 2021 assessed factors associated with transmission of SARS-CoV-2 among children or onward from children to households or to the community.
  - Hershow et al. examined SARS-CoV-2 transmission in US elementary schools in Utah between December 2020 and January 2021 against a backdrop of high community transmission levels. The authors identified low secondary attack rates within the school setting and attributed this finding to the use of prevention strategies which included mask use by pupils.
  - Bignami-van Assche et al. (note: preprint publication) reported a comparative case study of three major Canadian cities which had varying application of restrictions and measures around returns to in-person schooling. The authors speculated that universal mask mandates in schools in Toronto contributed to a lack of meaningful contribution of in-person schooling to community transmission.
  - Jordan et al. conducted a study of transmission of SARS-CoV-2 within summer schools in Barcelona in July 2020. Among 253 close contacts of 30 index case children, 12 subsequent cases were identified. This amounted to a secondary attack rate (SAR) of 0.3%, in comparison with the general population SAR of 1.9%. All centres followed a package of prevention protocols, which included face mask use.
  - Lessler et al. (note: preprint publication) used a large US-wide cross-sectional internet-based survey and identified an increased risk of COVID-19-related outcomes among survey respondents living with a child attending in-person schooling versus respondents with children in their household not attending in-person schooling. The authors found that school-based mitigation measures, particularly daily symptom screens, teacher masking, and closure of extra-curricular activities, were associated with significant reductions in risk. Where seven or more mitigation measures were in place, the risks associated with in-person schooling largely disappeared. Among respondents reporting seven or more mitigation measures, over 80% reported student and teacher mask mandates, restricted entry, extra space between desks and no sharing of supplies (for example books), while over 50% reported student cohorting, reduced class sizes and daily symptom screening.
Potential benefits and harms associated with the use of face masks by children

- The potential benefits associated with the use of face masks by children relate to harms avoided as a result of their use.
  - Should face mask use help to ensure schools remain open as part of a package of mitigation measures to reduce transmission within schools, children would thereby avoid the harms associated with school closure.
  - Should face mask use prevent COVID-19 in children, the health-related harms to children of COVID-19 would be avoided or reduced.
  - Should face mask use by children reduce the likelihood of a child becoming infected and subsequently transmitting the infection to a household member, the household and greater community benefit from reduced harms associated with COVID-19.

- The following evidence updates relating to potential benefits associated with the use of face masks occurred since the 2 March 2021 EAG meeting; these provide information on the harms which could potentially be avoided with enhanced prevention measures but largely do not provide clarity on the specific role of face masks in avoiding such harms:
  - The harms to children associated with school closure have been reaffirmed by the publication of the results of the Growing Up in Ireland Special COVID-19 Survey and the results of a survey conducted by the Centres for Disease Control and Prevention (CDC) of pupils aged five to 12 years.
  - The health-related harms to children of COVID-19 have been noted in a review published by the UK National Institute for Health Research, which stated that there is growing evidence of ‘Long COVID’ in children based on evidence published as of 28 February 2021. Also, additional studies have been published considering children who experienced severe COVID-19 which resulted in hospitalisation; these studies have observed persistent sequelae (for example, neurologic effects) in these children for many months following their initial diagnosis.
  - The preprint study by Lessler et al. suggested an increased risk of household COVID-19-related symptoms or test positivity where a child in the household was attending in-person schooling. This risk was observed to be minimised where a group of mitigation measures are in place. With regard to individual measures, daily symptom screening was found to be associated with a greater reduction in risk than the average reduction associated with the mitigation measures. Mask use by pupils was associated with a borderline significant reduction in risk commensurate with the average reduction associated with the mitigation measures.
The potential harms associated with face mask use by children could include physical, psychological or sociological effects resulting from their use. As noted in the 2 March EAG meeting, there is little documented evidence of harms associated with face mask use in the setting of COVID-19, particularly for cloth face mask use among children. Two small studies published in March 2021 were noted as providing some insight into this topic:

- Lubrano et al. conducted a cohort study among infants and young children in Italy examining the use of surgical face masks and the effects of their use on respiratory function. No significant changes in respiratory function were observed.
- Stajduhar et al. (note: preprint publication) examined the extent to which children could recognise faces when presented with images where the faces were wearing masks versus not wearing masks. The inclusion of face masks was found to reduce the ability of the children to perceive the faces and alter the manner in which children processed the faces. The authors speculated that this may have implications for children’s social interactions.

Acceptability to relevant stakeholders

- The Irish National Teachers’ Organisation (INTO) stated on 8 March 2021 that it remains the view of the organisation that a compulsory face mask policy for pupils in senior classes of primary school would help to reduce the risk of infection and provide an extra layer of defence against COVID-19. The INTO noted at this time that the organisation would continue to insist that this matter be kept under review.

- A representative of the National Parents Council (NPC), the representative organisation for parents of children in primary or early education, provided details of unsolicited contacts (phone and email) from parents to the NPC on this topic within recent weeks. The majority of contacts (249 of 262) occurred within the days following the publication of HIQA advice on this topic on 4 March 2021. These contacts were considered to have arisen from concerned individuals acting independently and represented parents of children across all primary school age-groups. While acknowledging that these may not be representative of all parents, the contacts overwhelmingly expressed opinions against the use of face masks by young children. In some cases, parents expressed the view that they would choose not to have their children attend in-person schooling if face masks were to become mandatory for children in the primary school setting.

Feasibility of a mask requirement or recommendation for children
As presented at the 2 March 2021 EAG on this topic, international guidance and Irish public health expertise suggest exercising caution regarding the feasibility of mask use, particularly in young children; such children may require assistance in wearing masks and this may be particularly important where young children wear glasses.

A number of studies published in March 2021 noted high levels of compliance (>80%) among primary school children where face mask use was required. However, detailed information on compliance, correct wearing of masks, and tolerability, particularly among younger children, was lacking, and reporting bias may be present.

A study conducted in London in July 2019 explored the wearability of face masks by children in the context of their potential use to reduce the effects of air pollution. Primary school children were asked to rate wearability of different face masks while performing standardised walking and running activities. The main complaint from children was that wearing certain masks made their faces too hot. This study concluded that children’s perceptions of face masks are highly affected by mask design, facial warmth while wearing the mask, and perceived breathability.

Contextual factors

As per the 2 March 2021 EAG meeting, it was noted that any requirements or recommendations made with respect to children may require consideration of contextual factors such as particular age-groups or settings in which these requirements or recommendations may or may not apply.

Considering the greater context of prevention and mitigation measures, it was noted that trials are now underway to examine the effectiveness of vaccination against SARS-CoV-2 in primary school aged children.

COVID-19 Expert Advisory Group

A meeting of the COVID-19 Expert Advisory Group (EAG) was convened for clinical and technical interpretation of the research evidence on 06 April 2021. The following points were raised in respect of the findings of the presentations:

The positivity rate among children tested for SARS-CoV-2 and the definition of close contacts in schools were discussed. It was clarified that close contacts are designated on the basis of a structured public health risk assessment, which balances the risk of transmission against the risk of unnecessarily depriving increased numbers of children of their ability to participate in in-person education.
There was a distinction drawn between the early childhood setting and primary schools, with differences in the pattern of the outbreaks noted. However, it was identified that primary school children may attend childcare facilities for pre- and after-school care with the potential for cross transmission.

The risks of children acquiring infection will likely continue to be higher in households than in schools.

There was consensus among EAG members that the epidemiological data were relatively reassuring in that case numbers among children had stabilised in the past two weeks, despite schools reopening and an initial uptick in cases in March 2021. These data were considered to support the effectiveness of the measures that are currently in place in schools.

The critical importance of maintaining in-person schooling was acknowledged. Some concerns were raised that the current layers of mitigation in schools may not be sufficient when current level five restrictions are eased, should community transmission increase.

It was suggested that the experience of countries which have been successful in mitigating COVID-19 and ensuring schools remain open is important to consider, and that this may particularly include the experience within Asian countries.

The number and range of mitigation measures in place in Irish schools was considered to be important. It was noted that the Lessler et al. study identified an association between the number of mitigating measures and the risk of household SARS-CoV-2 transmission. Public health expertise within the EAG noted that the majority of these mitigation measures are in place in primary schools currently, as outlined in the HPSC guidance for educational settings.

It was recognised that there is a lack of national data on parents’ and children’s attitudes and concerns regarding school mitigation measures. It was agreed that such data should be collected and considered when developing policy.

Public health doctors noted that mask wearing had not been raised as an issue of particular concern by parents, in the course of public health outbreak investigations.

The National Parents Council clarified that an EU level meeting is planned to discuss the acceptability of face mask usage in primary school settings.

There are ethical issues associated with requiring mask use in primary school children, given the relatively low transmission rates within schools, from school to households, and the low burden of disease in children.
There is ongoing concern to protect medically vulnerable people who live with children attending school. It was accepted, however, that vaccination of this population is underway, and once they are fully vaccinated they will no longer be required to adhere to any additional measures (for example cocooning).

Some members considered that face mask usage could potentially be recommended for senior classes in primary school (for example, fifth and sixth class, similar to recommendations in Belgium) should the epidemiological situation rapidly deteriorate. However, it was accepted that any decision to change policy on the use of face masks should be based on the latest national epidemiological data. It was recommended that the situation be kept under regular review, noting that it will take one to two weeks for the impact of changes in transmission to be seen.

Based on the currently available evidence, the benefit of adding face masks to existing IPC measures for primary school children was considered to be small. There was a general consensus that the evidence was not sufficient to warrant any significant policy changes. However, was agreed that the evidence needs to be kept under review.

There was consensus on the lack of evidence for significant physical harms associated with face masks, although skin irritation, including skin hypersensitivity, was noted as an uncommon but sometimes troublesome side effect.

With regard to public understanding of the potential benefits and harms of face masks, there is a need for reassurance on the lack of evidence of any significant physical harms associated with face mask use.

Public health doctors perceive social mixing and other activities outside of school settings as important contributors to cases among children. There was agreement that guidance on playdates and other social events needs to be emphasised and that a concerted effort was required to reduce the risk of transmission across all settings.

As per previous advice, communication with parents needs to reinforce the need to adhere to current public health advice, including the need to avoid wider school or after-school interactions (for example, after school playdates).
Advice

Arising from the findings above, HIQA's advice to the National Public Health Emergency Team is as follows:

- There was a general consensus among EAG members that, as of 6 April 2021, there should be no change in the minimum age for requirements and recommendations with respect to mask use in the community.

- The potential benefits of a requirement or recommendation for children to wear face masks must outweigh concerns regarding potential harms associated with face mask use.

- Based on the Irish epidemiological data in March 2021, there is reassurance that the package of mitigation measures in place in primary schools appear to be effective in minimising transmission. Any additional benefit associated with requiring children to wear face masks in the current transmission context is likely to be small.

- With regard to public understanding of mitigation measures, there is a need for reassurance on the lack of evidence of any significant physical harms associated with face mask use.

- Ongoing monitoring is required with respect to the epidemiological situation in children and the effectiveness of current risk mitigations measures in place in primary schools.

- Consideration should be given to proactively collecting representative data on parents’ and children’s attitudes and concerns with respect to face mask use. Such data could be used to help inform future policy development.

- As per previous advice, communication with parents needs to reinforce the need to adhere to current public health advice, including the need to avoid wider school or after-school interactions (for example, after school playdates).

- Given the ongoing evolving situation regarding community-level transmission, this advice should be kept under review and should be informed by national and international surveillance data and relevant evidence from the literature. It should be clearly communicated to the public that evolving evidence may result in changes to the current recommendations.