Principles for Managing SARS-CoV-2 Transmission Associated with Further Education

Executive Summary

- **Further Education (FE) creates connectivity between multiple organisations and could amplify local transmission.** It is highly likely that there will be outbreaks associated with FE, and asymptomatic transmission may make these harder to detect. Outbreak response needs local plans to be developed in collaboration between FE providers, local public health teams and any relevant work placement providers.
- **It is essential to develop clear strategies for testing and tracing, with effective support to enable isolation.** FE settings are good locations to pilot approaches such as population case detection (PCD). Enhanced testing in response to suspected outbreaks is likely to be beneficial in detecting and preventing ongoing transmission.
- **Safe provision of student education needs to be based on a hierarchy of risk.** This includes reducing in-person interaction, segmentation of students and environmental controls, including mitigating aerosol transmission risk through ventilation and use of face coverings.
- **There need to be specific strategies to consider the wider physical and mental health of students and staff, beyond COVID-19.** This will include maximising the influenza vaccination programme to minimise co-infection risks and providing support to mental health programmes.
- **Communication strategies are a critical part of minimising transmission risks associated with FE.** Guidance on how to behave is more likely to be adhered to if people understand the reasons they are asked to take certain actions, and if it is co-produced with the staff and students who will be affected by it.

Background

From September 2020 onwards, Further Education (FE) providers could see the return of all students and staff to these settings across the country. DfE have already provided guidance to FE[1] and providers are advanced in their plans for the new term. Guidance provided in e.g. Scotland[2] may differ from that in England, Wales or Northern Ireland.

This paper is provided in the context of existing guidance and FE sector plans and aims to supplement these by summarising the latest evidence relating to transmission associated with the resumption of FE activities from Autumn 2020, particularly the return of students to all FE and other related settings such as workplaces. It specifically considers how to manage transmission in the wider context of local and national interactions and brings together up-to-date evidence and advice in a set of specific principles for SAGE to endorse, with the following question:

What principles can minimise the impact of the return of FE on local and national outbreaks, taking into account the wider impacts and interactions highlighted above?

Key Considerations

1. FE creates connectivity between multiple organisations and could amplify local transmission

A significant risk associated with FE is the potential to facilitate wider transmission between households and workplace settings, by providing greater connectivity within a community (medium confidence). FE settings are diverse and highly connected with their local communities. A significant proportion of FE students are apprentices in workplaces creating connectivity between the FE providers and multiple other organisations. An outbreak associated with FE poses a risk for industry and the FE provider both in terms of health effects and loss of personnel who may be isolating.

All FE providers should expect to have cases of COVID-19 and it is highly likely that some FE providers, local health agencies and the National Institute for Health Protection (NIHP) will have to manage the consequences of a more significant outbreak either directly associated with their setting (courses or work placements) or within their local community or region (high confidence).

There is no strong evidence that those in FE demographics in general play a smaller role in transmission than adults in the general population (medium confidence). Evidence suggests there are a higher proportion of asymptomatic cases among younger age groups, meaning that cases and outbreaks are likely to be harder to detect among some FE student populations (high confidence).

Monitoring of such risks and any decision making can be carried out between local public health teams in collaboration with the FE providers and where necessary NIHP. Outbreak response needs local plans to be developed in collaboration between FE providers, local public health teams and any relevant work placement providers. These need to define actions and responsibilities across the range of eventualities including a clear approach for

[1] E.g. https://www.gov.uk/government/publications/coronavirus-covid-19-maintaining-further-education-provision/what-fe-colleges-and-providers-will-need-to-do-from-the-start-of-the-2020-autumn-term

[2] https://www.gov.scot/publications/coronavirus-covid-19-guidance-for-colleges/

how data on cases and outbreaks should be reported, and how this information is communicated between FE organisations and public health teams.

Plans should aim to minimise ongoing transmission while limiting the need for widescale closure of FE settings/sites, and need to consider this highly complex system including households, transport and the interfaces with workplaces rather than just the FE setting in isolation. As part of this it is important that there is a clear plan for communicating with staff, students and the local community during outbreaks.

2. It is essential to develop clear strategies for testing, tracing and isolation

A critical control against transmission is that people with symptoms isolate, are tested and engage with contact tracing. As such a national strategy defining key principles for testing in FE should be developed that can be adapted and implemented locally. This should be complementary to and part of NHS Test and Trace (NHSTT). This should cover enabling students and staff to easily access testing, communication about when to get a test, support for people required to isolate if the result is positive, and guidance on recording and reporting information to facilitate contact tracing. Evidence suggests there are a higher proportion of asymptomatic cases among younger age groups, meaning that cases and outbreaks are likely to be harder to detect among some student populations (high confidence).

Wider scale testing combined with appropriate action plans are likely to be beneficial in controlling outbreaks associated with FE. FE settings are good locations to pilot both mass testing / population case detection (PCD) and contact tracing approaches; studies that assess the effectiveness of these surveillance approaches should be carried out. Enhanced testing (beyond immediate contacts) in response to a suspected outbreak is likely to be beneficial in detecting and preventing ongoing transmission, but may require frequent testing, as well as follow up confirmatory testing to reduce the number of false positives asked to isolate incorrectly. Evidence suggests one-off PCD could have some impact on containment where people are arriving from areas of higher prevalence but limited longer-term impact on outbreaks – and as such may be limited in FE settings where students/staff are often local (medium confidence). The prevalence at which any PCD approach should be introduced / stopped needs to be carefully considered.

3. Safe provision of education needs to be based on a hierarchy of risk

A layered, flexible approach should be taken to managing transmission risks that considers a hierarchy of risk (see **Annex B**), the different modes of transmission, the duration of exposure and the vulnerability of the people concerned.

The risk management strategy must consider the learning outcomes of courses and student and staff wellbeing, alongside the transmission risks associated with different activities and the risk of amplifying transmission in the community, to determine the appropriate balance of online and in-person interaction. This will vary between courses depending on the activity and the demographics of the staff and students and will vary during term as prevalence changes.

There is strong evidence that reducing in-person interaction is an effective way to limit transmission and so delivery of activities online, especially for larger groups, is a key mitigation (high confidence). However, remote learning is not feasible for many FE courses which rely on practical training and hands on learning, and hence adapting these courses in

a COVID-secure way is essential. Providers should consider risks to both staff and students, and the potential risks for transmission in the community when making decisions.

Segmenting of student/staff populations (e.g. by course, year group, site, etc) should be designed to support easier detection of linked cases and, if necessary, enable more targeted closure / quarantine. Segmenting will be more effective if there are fewer contacts outside the group. It is important to consider that staff or those in workplace settings may inadvertently connect segments (high confidence).

Principles for managing transmission risk and the evidence for mitigation measures have been set out previously and should address aerosol, droplet and surface transmission. Super spreading outbreaks are associated with crowded indoor spaces (high confidence) and there is growing evidence that aerosol transmission may be an important transmission route (medium confidence). Particular attention should be given to ventilation provision alongside plans for managing social distancing; together these are likely to constrain the occupancy of physical spaces for educational activities.

Face coverings are an important mitigation against droplet and aerosol transmission in shared indoor spaces especially where social distancing is difficult to maintain, or ventilation is poor (medium confidence). Some FE courses including those with close contact training elements (such as hair and beauty, healthcare related), significant handling of tools or materials (such as workshop-based courses) or interactions through theatre/musical performance may pose additional risks (medium confidence) and increased consideration of PPE/face coverings, enhanced ventilation or cleaning is needed.

4. <u>There need to be specific strategies to consider the wider physical and mental health of students and staff beyond COVID-19</u>

Whilst younger FE students are likely to have less severe COVID-19 (high confidence), this is not true for many students and staff, and there is no strong evidence that those in FE demographics in general play a smaller role in transmission than adults in the general population (medium confidence). FE settings have a significant number of staff and students who may be more vulnerable to severe consequences of COVID-19, and this will vary between organisations.

There is likely to be co-infection with other viruses including influenza over winter[3] (high confidence). Maximising the flu vaccination programme to protect at-risk groups in FE settings will be important, as will approaches to distinguish between respiratory viruses (e.g. multiplex testing).

There is evidence of physical and mental health impacts from missing or limited access to education and from reduced social interaction and support that can arise from remote learning. Although direct evidence in FE is more limited than in schools, survey evidence related to COVID-19 indicates disruption to research and learning, lower wellbeing and increased mental distress (low confidence). Further restrictions and short-term actions such as isolation in response to test and trace may impact anxiety. It is important that provision is made to support mental and physical health of staff and students beyond COVID-19.

[3] SAGE 47

5. Communication strategies are a critical part of minimising transmission risks associated with FE

Current guidance is complex, and many people are unclear as to what the current rules are (medium confidence). Guidance differs across the four nations of the UK. As education providers, FE institutions are in a good position to help staff and students understand not just what 'the rules' are that apply to their own institution, but, more importantly, the principles that underlie these rules. This will provide better motivation for people to adhere to them and enable them to adapt their behaviour to FE settings (medium confidence). Providing education as to how COVID-19 spreads, and how to reduce the risk, should underpin guidance and be an important induction activity.

Guidance on how to behave is more likely to be adhered to if it is co-produced with the staff and students who will be affected by it. This also reduces the risk of unexpected problems or tensions arising in implementation (medium / high confidence). Co-production is not costly or time-consuming and FE providers should seek to involve a diverse range of staff and students in developing and refining guidance and communications. Guidance should promote the salience of the group's identity, promote safe behaviours as one of the norms of the group, and ensure that student organisations lead in promoting COVID safety. Policies and messages should take into account the diversity of social and cultural backgrounds of students and staff. Obtaining maximum support and adherence will require that messages are tested with people from different backgrounds to ensure that wording and concepts are understood, reinforced by people who are trusted, take into account the issues that people from different cultures may face (e.g. religious observances, typical living arrangements), and are sensitive to pre-existing attitudes towards health promotion and health communication (high confidence).

Disagreements, mistakes and transgressions will happen. Preventing anger, confrontation and stigmatisation will be important. Students and staff should be encouraged to adopt a supportive attitude, while engagement, explanation and encouragement should be considered for transgressions as well as enforcement.

Consistency in messaging and guidance should be sought across departments and sites, and partner organisations, in order to reduce confusion and promote confidence. Where different rules are in place in different settings, this should ideally be explained. Apparent inconsistencies between institutions may also be problematic in reducing trust – there should be communication between neighbouring institutions or institutions that share courses or facilities.

The section overleaf provides more detail on the evidence-based principles for FE outlined above.

Annex A provides detail on the characteristics of FE settings and demographics

Annex B outlines a hierarchy of risk controls

Annex C summarises some international comparisons for FE

Evidence Based Principles

SAGE has previously outlined design principles for environmental transmission[4] and behavioural and social interventions[5]. Whilst principles such as reducing the number of contacts, and measures to reduce the probability of transmission in contacts apply generally and have been outlined previously, we have identified further evidence and advice specific to FE settings.

FE Settings

Further Education settings are not homogenous (see **Annex A**) and have different demographics, patterns of activity and environments.

FE plays an important role in society, directly providing substantial numbers of jobs and supporting economic and knowledge development through training and other activities. Many elements of FE can successfully be delivered remotely, however there are risks in some areas that require elements face-to-face training. As well as risks related to COVID-19, there may be negative impacts to students and business if access to education is limited which may disproportionately disadvantage vulnerable or marginalised students.

Further Education settings share some features and demographics with both schools and workplaces, with some differences: whilst a large proportion of students are aged 16-18, a significant number of students and staff are older than 50; nearly 25% of students are from a BAME background and >50% of adult students are from the bottom 2 IMD quintiles; students are also likely to attend workplaces as part of study or otherwise; FE students are more reliant on public transport. DfE indicate 20% of FE students self-report having a learning difficulty and/or disability.

Amplification of Transmission and Outbreak Response

Outbreaks linked to FE settings are likely. Whilst formal re-opening to children in educational settings began on 1st June, secondary and further education settings were only asked to provide face-to-face education support to students in years 10 and 12 on 15h June. From 13 July FE institutions were open to priority students aged 19+ to return to onsite delivery, in addition to 16 -19 students.[6] Attendance numbers were lower than early years settings, and DfE guidance indicated colleges were only able to have up to 25% of students, including 16-19 year olds on site at a time[7].

PHE data in England from 1st June – 18th Aug 2020 indicates that there were 69 confirmed clusters or outbreaks in educational settings, of which 7 were in secondary age groups and 7 in 'mixed' age groups. In workplace settings, there were 236 confirmed clusters/outbreaks between 29th June – 16th Aug[8]. It is not clear if any, or how many, of these were FE settings or workplaces with links to FE. PHE find that outbreaks in all educational settings were uncommon in June and were strongly correlated with regional SARS-CoV-2 incidence. Staff

[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/892043/S0484_Transmission_of_SARS-CoV-2_and_Mitigating_Measures.pdf

[5] E.g. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/892046/S0217_Principles_for_the_design_of_behavioural_and_social_interventions.pdf

[6] Students who have had their assessments delayed and were due to complete level 2 or 3 programmes between March and July 2020, Apprentices, Students participating in level 1 and below learning, Community education provision.

[7] https://explore-education-statistics.service.gov.uk/find-statistics/attendance-in-education-and-early-years-settings-during-the-coronavirus-covid-19-outbreak/2020-week-29

[8] PHE reporting; HPzone; Aug 2020

members had an increased risk of SARS-CoV-2 infections in any educational setting with the majority of outbreaks linked to staff[9].

Asymptomatic transmission is a key risk in FE settings. Current SAGE advice on asymptomatic infection indicates uncertainty remains and that between 30-80%[10] of all infections could be asymptomatic. This may vary by circumstance. NERVTAG are due to review this shortly. The proportion of infections that are asymptomatic may also vary with age, with more asymptomatic infections in younger age groups[11]. For example, one large contact tracing study found 18.1% (95%CI, 13.9-22.9%) of infected people under 20 developed symptoms vs 64.6% (95%CI, 56.6-72%) of those over 80[12].

SAGE has previously noted that individuals likely to facilitate super-spreading events may be asymptomatic or paucisymptomatic, however studies of cluster tracing internationally did not identify schools or colleges as centres of these events. There is medium confidence in this as national and international closures have meant there has been little opportunity for transmission[13], but the high numbers of cases linked to e.g. US universities suggest asymptomatic transmission is significant[14].

Increased cases and outbreaks in FE could amplify local transmission of the virus*:* FE staff and students create a large network (2.6% of UK population). There is significant complexity and variety within FE settings and they may link multiple households and workplaces to educational settings, akin to schools[15]. Some FE settings will be significantly more networked than others. Many FE students attend multiple sites, are present at educational and workplace settings (e.g. in apprenticeships) or have part-time jobs. A significant number of FE staff work at multiple sites and providers.

The FE sector is not a homogenous group, and different FE settings should be considered individually – variation in demographics, course structures, network interactions and other factors have different implications for risk. For instance:

- Some FE settings or learning types, such as sixth-form colleges or traineeships, are likely to have primarily young adult students. Others will have a much higher proportion of older, more vulnerable students.
- The frequency and nature of contacts will also differ across FE settings and learning types. This will partly reflect the demographics, with the number and clustering of social contacts differing by age, but also due to the different activities in place. Some FE courses will have an employment component to the course, and/or with extensive off-site training; some vocational courses may be in higher risk occupations such as hairdressing or social care.
- It is also important to bear in mind that a substantial proportion of FE courses are part-time; unlike schools, it will not necessarily be the case that households/education settings are the main source of contacts for students.

As such, the relevance of past advice will differ across settings and learning types. For example: sixth form colleges are relatively similar to older years in secondary schools, so

[9] PHE: SARS-CoV-2 infection and transmission in educational settings: cross-sectional analysis of clusters and outbreaks in England, 12 Aug 2020
[10] SAGE 41, 11th June 2020
[11] SAGE 36
[12] https://arxiv.org/abs/2006.08471

[13] SAGE 42 minutes, 18th June 2020
[14] See HE companion paper
[15] https://www.medrxiv.org/content/10.1101/2020.08.21.20167965v1

previous advice or analysis on secondary schools may be helpful. In contrast, apprenticeships and traineeships will need to draw on both advice for schools and workplaces, including any occupation-specific advice.

Compared to Higher Education, networks related to FE settings are more likely to be localised and involve less migration across the country and internationally. As such, the impact of transmission risks may be more likely to have local or regional rather than national impact.

We do not have specific modelling on transmission associated with FE settings, although some insight can be gained from models that consider schools and highly networked communities[16]. This suggests that the main influence of FE will be to increase contact rates within a community and hence amplify transmission at a local scale. Consequently, an outbreak in an FE site is more likely to threaten locally than nationally.

FE providers should plan for an increase in cases or an outbreak associated with their setting. Outbreaks are more likely if local prevalence increases, and providers may have to adapt elements of their provision at very short notice. At least the following possibilities for outbreaks should be assumed and planned for:

- An increased prevalence locally which may require enhanced interventions to be observed by the whole community including students and staff
- A large-scale outbreak which may result in substantial restrictions implemented at a local level that impact on FE activities
- A localised outbreak associated with a particular student/staff cohort or department
- Outbreaks in FE settings with the potential to spread to workplace settings through links related to apprenticeships or part-time work
- Outbreaks in workplace settings with the potential to spread to FE settings through links related to apprenticeships or part-time work

Strategies to mitigate amplified transmission risk should have local coordination. Plans should be developed in collaboration between FE, local public health teams and local authorities to consider the response to these different outbreak scenarios and the different measures they might take, taking account of potential negative impacts on mental health, wellbeing and the delivery of education**.** Interfacing between local public health teams and national surveillance (NIHP) should be used to manage larger outbreaks in multiple FE settings, or outbreaks across FE and linked settings, which could result in more widespread local or regional transmission.

Plans should define actions and responsibilities across the range of eventualities including a clear approach for how data on cases and outbreaks should be reported, and how this information is communicated between FE organisations and public health teams. Outbreak response should aim to minimise ongoing transmission while limiting the need for wholescale or long-term closure of FE settings/sites. They need to consider the complexity of the system including households, transport and the interfaces with workplaces rather than just the FE setting in isolation.

Effective systems to record and respond to cases, particularly those within specific departments, courses, sites and linked to workplace settings, are required to be able to understand where transmission is occurring within FE settings. Currently the definition of a ‘cluster’ and ‘outbreak’ relates to “two or more test-confirmed cases of COVID-

[16] See e.g. SPI-M-O: comments on schools and universities; presented to SAGE 9 July 2020

19 among individuals associated with a specific non-residential setting"[17]. In FE settings responses should consider if clusters/outbreaks are related to e.g. specific sites or sections of the estate.

There should be clear plans for communication and encouraging adherence if an outbreak occurs. If cases or rumours of cases occur it may produce a divisive and anxious atmosphere for both staff and students, and the wider community. This would be intensified by having no clear signal of how many cases would represent a dangerous situation for the community. FE administrations should work closely with their local public health authority to determine appropriate messaging and measures. Messaging from FE providers to the surrounding community or district about its COVID-secure practices is important to prevent social division.

Generic principles of crisis communication will apply during an outbreak. People will expect to receive information that they can trust. Updates will need to be given regularly and at predictable times, and through a range of mechanisms. Uncertainties should be acknowledged together with information on how they are being resolved. Feedback should be sought on what people do not understand, on what rumours are circulating, or on where communication is going wrong. Above all, concrete actions should communicated – what do people need to do? Institutions should take time now to think through how they will communicate under a range of possible scenarios.

Clear guidance needs to be given to staff and students who commute in the event of imposition of local or regional restrictions. Students or staff may live in a different geographic region to their FE setting or workplace, which may have different restrictions depending on prevalence (e.g. Leeds currently has different rules to Bradford). Flexibility will be required to enable such staff and students to engage remotely if they are unable to travel due to restrictions, and staff and students must not feel under actual or perceived pressure to attend sites if this contravenes restrictions.

Testing, tracing and isolation (TTI)

It is important that testing plans in FE settings are complementary and linked-up with NHSTT. TTI plans in FE settings should explicitly consider interactions with other mitigations, student and staff welfare and behaviour, and vulnerable groups. Accurate and effective testing and contact tracing across all relevant settings, including linked workplaces will be vital. This includes the coverage of / engagement with the system, testing strategies, and adherence to measures such as quarantine.

SAGE has repeatedly outlined evidence on the importance of testing and tracing approaches, including that an effective test and trace system ideally covers 80% of contacts[18] and the importance of cluster tracing including backwards contact tracing[19]. Current evidence suggests it is premature to use antibody testing to support e.g. 'immunity passports'[20]. SAGE have also emphasised the importance of engagement with the test and trace system, including effective communications and transparency[21]. Improving adherence should be a principal target[22]. The predictive value of any testing approach will substantially

[17] https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/epidemiological-definitions-of-outbreaks-and-clusters-in-particular-settings

[18] SAGE 32
[19] SAGE 40
[20] SAGE 45
[21] SAGE 45
[22] SPI-M-O consensus statement, 19th Aug

depend on prevalence, sensitivity and specificity, with a high specificity test necessary to minimise false positive rates[23].

A national plan for testing and isolation must be developed that can be adapted and implemented locally Current evidence from the general community suggests that uptake of testing among people who have cough, fever or anosmia is low. Estimates range from 12% (among people with symptoms responding to polls) to 35% (derived by dividing the number of cases identified per day in pillar two by NHS Test and Trace by the daily incidence estimated by the Office for National Statistics).[24] Staff and students must be encouraged and supported to obtain a test. This will require them to:

a) Understand the symptoms that should trigger a test (current recognition is 60%[25]);

b) Understand that a test must be requested for even mild symptoms, and that a "wait and see" approach is not acceptable[26];

c) Have very easy access to a test facility, given that lack of transport will be a major barrier and be assured that accessing a test and receiving the result is straightforward and hassle-free[27];

d) Be assured that any perceived negative consequences to requesting a test will be dealt with, without hassle. If staff or students feel that the result of a test may have a negative impact on their studies, pay, workload, peers or colleagues, this will be a disincentive to request a test or to reveal their symptoms[28];

e) Be able to effectively isolate, as discussed in the section below.

For a given capacity of testing, careful consideration should be given to the approach that will be most beneficial. The SAGE Task and Finish Group on Mass Testing (TFMS) has advised that 'population case detection' (PCD) – testing of regular and/or large-scale testing of defined populations regardless of if they have symptoms, should be carefully considered alongside the benefit of investing equivalent resources into the speed and coverage of testing symptomatic cases and contacts through NHSTT and/or improving adherence to isolation[29]. Similarly, a high prevalence of general respiratory symptoms, such as related to influenza in winter, could significantly increase testing demand and may require approaches such as multiplex testing[30]. PCD in populations with low prevalence that does not use an extremely high specificity test could result in a higher number of false positive

[23] Multidisciplinary Task and Finish Group on Mass Testing, Consensus Statement for SAGE, 31 Aug 2020
[24] Department of Health and Social Care, NHS Test and Trace. Weekly statistics for NHS Test and Trace (England) and coronavirus testing (UK): 06 August – 12 August. 2020; and Office for National Statistics. Coronavirus (COVID-19) Infection Survey pilot: England and Wales, 21 August 2020 2020 [updated 21 August 2020. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveypilot/englandandwales21august2020

[25] Rubin GJ, Smith LE, Melendez-Torress GJ, Yardley L. Improving adherence to Test, Trace and Isolate. *Journal of the Royal Society of Medicine*.
[26] Carter P, Megnin-Viggars O, Rubin GJ. What factors influence symptom reporting during an emerging infectious disease outbreak? A rapid review of the evidence. medRxiv. 2020 July 23 2020 https://www.medrxiv.org/content/10.1101/2020.07.23.20159897v1.article-info
[27] Carter P, Megnin-Viggars O, Rubin GJ. What factors influence symptom reporting during an emerging infectious disease outbreak? A rapid review of the evidence. medRxiv. 2020 July 23 2020 https://www.medrxiv.org/content/10.1101/2020.07.23.20159897v1.article-info
[28] Webster RK, Liu R, Karimullina K, Hall I, Amlôt R, Rubin GJ. A systematic review of infectious illness Presenteeism: Prevalence, reasons and risk factors. BMC Public Health. 2019;19(1) doi:10.1186/s12889-019-7138-x.

[29] Multidisciplinary Task and Finish Group on Mass Testing, Consensus Statement for SAGE, 31 Aug 2020
[30] https://acmedsci.ac.uk/more/news/prepare-now-for-a-winter-covid-19-peak-warns-academy-of-medical-sciences

than true positive individuals required to isolate – something that could be mitigated with further rapid confirmatory testing.

One-off PCD is not likely to have significant benefits in FE settings where staff and students are local. One-off PCD before a long-duration activity such as the start of term may not provide much benefit in preventing outbreaks but could have some impact on containment where students are arriving from areas of higher prevalence. If students and staff come from the local area this approach is likely to be less beneficial than a scenario where students are e.g. arriving to higher education settings from areas of much higher prevalence. For preventing outbreaks in general, the potential for repeated introductions means that even high sensitivity one-off testing will have limited impact. Testing incoming students for containment is equivalent to testing international travel arrivals, and pre- or post-arrival quarantine could be as effective, if adhered to.

Regular PCD is most likely to be beneficial and feasible in cluster outbreak scenarios and well-defined higher-risk settings. The background prevalence, aim, and actions triggered by positive results need to be carefully considered. Whilst the TFMS group identified universities as potential high-risk settings, schools were identified as lower risk. As noted above, FE settings and demographics are not homogenous and could differ widely here. Differences in background prevalence, environments, links to workplaces, behaviour and the mitigations in place, among others, will all have an impact on the level of risk in specific FE populations. To have confidence in early detection of a large proportion of infectious individuals would require frequent testing and fast turn-around times; for example one modelling study estimated that for current estimates of PCR test sensitivity, weekly screening of healthcare workers and a 24h delay from testing to isolation could reduce their contribution to transmission by 23% on top of self-isolation following symptoms[31]. Lower test sensitivity and/or frequency of testing would reduce the effectiveness of these approaches. The prevalence at which any PCD approach is introduced and ceased, as well as the impact of test specificity on false positives, needs to be carefully considered. Particularly for lower-risk FE populations and settings, a large number of individuals may be required to isolate incorrectly with PCD – very high test specificity and/or confirmatory testing could reduce this number.

Any potential enhanced or mass testing approaches should be informed by emerging research and pilots and consider the best timing and approach for specific outcomes. However, FE settings may provide the kind of well-defined institutional settings where mass testing may be more likely to be effective in detecting outbreaks quickly.

Both HE and FE settings are good locations to test the potential for enhanced testing strategies and technologies, and research pilots to explore effectiveness are taking place in a number of UK universities. Similarly, FE settings may be good testbeds to explore the effectiveness of other approaches such as contact tracing apps. Where universities carry out their own testing, it is important that results are shared with NHSTT. Enhanced regular testing may also be appropriate for students and staff associated with high risk courses, for example hair and beauty or healthcare courses involving close contacts or workplaces which are associated with cases.

Outbreak responses: contact tracing and PCD. It is important to ensure effective mechanisms to enable contact tracing, and to pay particular attention to those spaces where mechanisms are not already in place to record this information such as shared study spaces

[31] Grassly et al. Lancet Infect Dis, 2020. https://doi.org/10.1016/S1473-3099(20)30630-7

or computer clusters. Enhanced testing in response to cases may be an appropriate strategy when contact tracing is challenging or there is concern over wider transmission. This could for example include testing a whole course year group or department in response to cases. Such a strategy needs to have clearly defined outcomes and consideration of frequency of repetition (see PCD principles above) and should not replace symptomatic testing and contact tracing.

Testing must be supported by appropriate planning and support for students and staff quarantining. In particular, the implications of testing for numbers in isolation or quarantine and how institutions plan to effectively accommodate this should be part of the decision-making. For example: if there is no segmentation of students in place, SPI-M work on universities indicates that relatively few infections could result in the majority of an organisation needing to isolate/quarantine, although it is not clear if this directly applies to FE. The optimal testing strategy will depend on adherence to isolation; this in turn is influenced by the support in place.

Among people reporting symptoms of COVID-19 in England, self-reported adherence to isolation is low[32], and self-reported ability to self-isolate is three times lower in those with incomes less than £20,000 or savings less than £100[33]. This is likely to affect many staff contracted from private companies including cleaning, catering and security staff, and may be particularly relevant for students who rely on part-time employment to support themselves. There is minimal evidence on the extent to which students comply with self-isolation for COVID-19, but analysis of a large US influenza outbreak[34] showed compliance with isolation was very poor with over 93% of students reporting leaving their accommodation before the recommended 7 days, and 50% leaving daily. A large proportion were concerned over missing classes, while others were going out for food/medicine, or just felt OK or wanted to go out. 44.7% reported attending social activities before 7 days had passed, and 35.9% had visitors while they were still sick. Nearly half left campus for >1 day while sick (44.9%) including going to parents or friends' homes. It likely that those who are not in self-contained accommodation will find it more challenging to comply. Among people with symptoms in the general community, 75% report having left the home in the past 24hrs[35].

Where a positive result is identified and a student or member of staff is required to self-isolate, support from the institution will be essential. Being placed into isolation or quarantine is often an upsetting experience[36] [37]. For staff or students, there will be fears about the potential of infecting other members of their households (including vulnerable family

[32] Smith LE, Fear NT, Potts HWW, Michie S, Amlot R, Rubin GJ. Factors associated with requesting an antigen test and self-isolating after developing symptoms of coronavirus. Report to DHSC. 2020a July 17.

[33] https://www.medrxiv.org/content/10.1101/2020.04.01.20050039v1

[34] Tarissa Mitchell, Deborah L. Dee, Christina R. Phares, Harvey B. Lipman, L. Hannah Gould, Preeta Kutty, Mitesh Desai, Alice Guh, A. Danielle Iuliano, Paul Silverman, Joseph Siebold, Gregory L. Armstrong, David L. Swerdlow, Mehran S. Massoudi, Daniel B. Fishbein (2011) Non-Pharmaceutical Interventions during an Outbreak of 2009 Pandemic Influenza A (H1N1) Virus Infection at a Large Public University, April–May 2009, Clinical Infectious Diseases, Volume 52, Issue suppl_1, January 2011, Pages S138–S145, https://doi.org/10.1093/cid/ciq056

[35] Rubin GJ, Smith LE, Melendez-Torress GJ, Yardley L. Improving adherence to Test, Trace and Isolate. *Journal of the Royal Society of Medicine.*

[36] Brooks SK, Webster R, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. The psychological impact of quarantine and how to reduce it: Rapid evidence review. *Lancet* 2020;395:912-920.

[37] Williams SN, Armitage CJ, Tampe T*, et al*
Public perceptions and experiences of social distancing and social isolation during the COVID-19 pandemic: a UK-based focus group study
BMJ Open 2020;**10:**e039334. doi: 10.1136/bmjopen-2020-039334

members). Evidence on improving adherence to isolation is available elsewhere[38]. FE institutions can promote adherence and reduce distress if they:

a) Inform people in advance what will happen in these circumstances. This may help to reduce the stress involved by making the situation more predictable and may increase intention to isolate[39]. Ensuring people know the rules around self-isolation and quarantine is also essential and should not be taken for granted.

b) Ensure that policies are in place that prevent staff or students from worrying that they will be penalised or will miss out by adhering to isolation. This will need to include clear rules and reassurance around coursework extensions, ability to catch-up on missed classes, and preventing any financial loss. For students undertaking work placements this reassurance also needs to apply to absence from the workplace.

c) There is evidence that adherence to isolation and quarantine is higher in people who appreciate its importance for public health. This may be less immediately apparent for young adults, who suffer less severe illness. Focussing on the importance of reducing transmission to others who are more vulnerable may be useful.

d) Highlighting isolation and quarantine as a social norm will promote adherence. It should be portrayed as something that is expected and respected by staff and students.

Practical support is essential for those in isolation or quarantine. People who receive help from outside the home are more likely to adhere[40]. Although help can be provided from multiple routes (local council, friends and family, voluntary sector), FE institutions may need to take a lead on this for some students and staff.

Good practical support (including access to food and medical care) and information will help reduce distress among people in isolation. Preventing boredom, resolving fears around financial impact, and ensuring that there is no stigma attached to being in isolation should help mitigate any distress[41]. Access to more formal mental health provision (e.g. an institution's counselling service) may also be required, particularly for staff or students with pre-existing mental health needs.

Safe Provision of Education

A layered, flexible approach should be taken to managing transmission risks that considers a hierarchy of risk (see Annex B), the different modes of transmission, the duration of exposure and the vulnerability of the people concerned.

A clear principle from the hierarchy of risk control is that elimination (e.g. removing in-person activities) is the most effective approach to control transmission, followed by substitution

[38] Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. How to improve adherence with quarantine: Rapid review of the evidence. Public Health. 2020 Mar 30.
[39] Martiny-Huenger, T., Bieleke, M., Oettingen, G., & Gollwitzer, P. M. (2016). From thought to automatic action: Strategic and spontaneous action control by if-then planning. In *Reflective and impulsive determinants of human behavior* (pp. 81-96). Routledge
[40] Smith LE, Amlôt R, Lambert H, Oliver I, Robin C, Yardley L, **Rubin GJ.** Factors associated with adherence to self-isolation and lockdown measures in the UK; A cross-sectional survey. *Public Health.* https://www.medrxiv.org/content/10.1101/2020.06.01.20119040v1
[41] Brooks SK, Webster R, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. The psychological impact of quarantine and how to reduce it: Rapid evidence review. Lancet 2020;395:912-920.

(e.g. changing the activity to substantially reduce interaction). Alongside any adjustments to enable in-person provision, it is important that access to online learning is also considered, both in terms of accessibility of materials for different students and in their ability to engage effectively including whether they have appropriate equipment, working spaces and internet connections.

Transmission risk is affected by the duration and type of contact, not simply the number of contacts. The risk of a wider outbreak is also influenced by the degree of clustering. If contacts are highly clustered, then this will limit the potential for extensive transmission chains.

Segmentation means creating small, sub-networks such that one person infected has limited chance of infecting outside of their sub-network. Segmentation has significant advantages: reduces transmission risk (a smaller number of people to infection), easier to control (smaller number of known contacts) and less disruptive to control (small number of people to quarantine or test). The smaller a sub-network, the smaller the risk that it has any infection in it.

- Segmentation of groups may also support easier detection of linked cases - two or more cases in the same segment would provide a signal of where transmission is likely to be occurring. This requires that it is known which students are in which segment.
- Rather than isolating an entire course, use of segments may also mean that certain classes can be isolated instead, minimising wider disruption.
- Staff should also be included in segments where possible rather than bridging groups. Particular attention will need to be given to settings such as libraries and professional service staff.

There is already some natural segmentation and use of “rotas” in FE, through the part-time attendance of some courses. Where institutions provide multiple part-time courses on different days, it would be sensible to ensure to minimise interaction between these courses and reduce overlapping schedules across groups on-site.

Reduction of any overlapping networks with other institutions and workplaces will help to reduce outbreak risk and size of outbreaks if they occur. For example, where there is a work component (e.g. apprenticeships), it would be helpful to ensure alignment of study and work cohorts – so those from the same course tend to be in the same workplace, rather than across multiple workplaces (and possibly with apprentices from other FE institutions).

The effectiveness of segmenting groups on transmission will be affected by the wider context and population measures in place – segmentations will have greater impact if there are fewer contacts outside the group (i.e. if wider population measures to reduce transmission are not relaxed, and are adhered to).

Particular attention should be paid to courses and settings that connect up staff and students across the FE provider or between organisations. Courses that involve work placements should consider the potential to transfer infection between organisations and need specific risk assessments that consider both environments. Libraries, computer clusters and shared study spaces are used by multiple students and may connect up cohorts/segments. Measures could include restricting use to particular courses, rotas for use, enhanced cleaning, and strong messaging about hygiene. Timetabling should consider the risks of moving groups of students around multiple buildings on a site.

Staff who have contact with many students or other staff will need to take particular care and be offered greater protection by their employers and colleagues. SAGE has

previously produced guidance on the specific issues relating to people with a high number of contacts[42]. This emphasises the need for people to avoid close, prolonged indoor contact with anyone as far as possible (at work, when travelling and in social contexts) and for people with different social networks to avoid meeting or sharing the same spaces. The responsibility for this lies with everyone – the staff involved, their colleagues and their employers. FE employers should consult in particular with professional service staff, who may have the highest level of contacts with students, and with students. In addition, workers who carry out more potentially exposing activities such as cleaners should be consulted, as should staff who work at multiple sites. Part time staff who provide tutoring alongside employment in another workplace should also be considered explicitly in planning as this networks organisations together.

Flexibility in plans for management of transmission is required as risks are dynamic. Environmental and behaviour modifications will reduce risk of transmission, and therefore risk of outbreaks, rather than negate them. The risk of transmission is largely determined by the prevalence of infection in staff and students, and if this becomes high, then increasing on-line delivery for some or all courses will be necessary to reduce prevalence and prevent large-scale outbreaks.

Managing Environmental Transmission

Principles for managing transmission risk and evidence for multiple mitigation strategies have been set out in previous EMG papers[43] and indicate that there is evidence for three modes of transmission (aerosol, close range droplet, surfaces). Duration of exposure is important with transmission more likely in spaces where people spend a long period of time with others (e.g. classrooms, offices, labs, workshops, staff room) rather than spaces where there is a very short duration of interaction (e.g. passing in the corridor or on the staircase).

Aerosol transmission may be a significant mode of transmission especially for super spreading events which lead to multiple secondary cases.[44] The environment in many FE buildings is conducive to aerosol transmission with poorly ventilated classroom or office spaces posing a particular risk. There is evidence to support enhanced risk associated with certain activities:

- There is emerging evidence that loud singing and speech can generate more aerosols and so could enhance risks, which may pose challenges for performing arts courses as well as loud speech during lecturing and presentations. Mitigation measures will include 2m distancing, face coverings for those not performing, ensuring spaces have enhanced ventilation, restricting sizes of groups and duration of activities and using microphones[45].
- There is evidence of higher transmission with enhanced aerobic activity[46]. Sports based courses should ensure distancing and good ventilation

[42] E.g. https://www.gov.uk/government/publications/managing-infection-risk-in-high-contact-occupations-11-june-2020
[43] e.g. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/892043/S0484_Transmission_of_SARS-CoV-2_and_Mitigating_Measures.pdf

[44] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907587/s0643-nervtag-emg-role-aerosol-transmission-covid-19-sage-48.pdf
[45] PHE singing/wind instruments (SWI) working group paper to SAGE; 13/08/2020
[46] https://wwwnc.cdc.gov/eid/article/26/8/20-0633_article

Ventilation should be given a similar weighting to other control measures. There is evidence from several settings that low ventilation rates are associated with higher transmission rates[47]. Actions should include:

- Identifying spaces where there is no provision of ventilation. Ideally activities in these spaces should be relocated, but if this is unavoidable then restrict these spaces to single occupancy or for very short durations by more than one person. In the latter case, face coverings should be worn.
- Identifying spaces which rely on opening windows for ventilation and considering how best to make provision for winter. This should include appropriate communications to people who use the space to make sure they don't inadvertently shut off ventilation.
- Ensuring all spaces with multiple occupants are well ventilated. This should aim to meet current guidance on ventilation rate for the setting. This is typically 10 l/s/person, based on full occupancy, with higher rates recommended in performance and sports settings as detailed in DCMS guidance.
- Considering a shorter duration of in person activities with intermittent "fallow time" between classes to ventilate a space may be a beneficial approach to reduce risk for spaces that are used by different groups or one group over an extended period[56]
- Considering the addition of appropriately sized air cleaning devices in spaces which can't be effectively ventilated and are essential to use[48]
- Providing suitable information to staff and students to reassure them that the ventilation provision is appropriate, and if necessary has been checked.

Ongoing work through the Virtual Forum for Knowledge Exchange in the Mathematical Sciences (V-KEMS) and RAMP groups are looking at modelling risk in settings such as lecture rooms. An online risk calculator has been developed by researchers at CU Boulder which enables aerosol transmission risk (doesn't include close range droplet) to be related to occupancy of a space, duration of activity and ventilation rate[58], shows that transmission is likely unless occupancy is decreased and/or ventilation enhanced. SAGE work on singing and music[59] shows enhanced aerosol generation in performing arts poses an even greater risk and requires larger rooms and significantly increased ventilation to mitigate.

Face coverings are an important mitigation. Face coverings act as a source control and provide some protection to the wearer. There is good evidence for their effectiveness in preventing droplets from being released by an infected person and, and some evidence they can reduce the exposure of someone else to those droplets. They may also limit aerosol transmission by capturing droplets at the source and hence preventing them evaporating into smaller aerosols that can remain suspended in air.[49] Their use will therefore have the greatest benefits in scenarios where (i) people have to come into close proximity, even for a short period of time, and hence could be exposed to higher concentrations of aerosols and droplets close to an infected person, and (ii) people are in the same shared space for a period of time and breathing the same air, particularly if the space is poorly ventilated or there is activity that could produce enhanced aerosols.

Vocational training involving very close contact with other people (e.g. hair and beauty) may pose specific risks There is some evidence that face coverings can prevent transmission[50]

[47] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907587/s0643-nervtag-emg-role-aerosol-transmission-covid-19-sage-48.pdf
[48] SAGE EMG, Application of UV disinfection, visible light, local air filtration and fumigation technologies to microbial control, 18th May 2020
[49] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907587/s0643-nervtag-emg-role-aerosol-transmission-covid-19-sage-48.pdf
[50] E.g. https://www.cdc.gov/mmwr/volumes/69/wr/mm6928e2.htm

and hence PPE (masks & face shields) and specific protocols to protect both the student and the person treated are necessary. Course providers should consider using approaches such as dummy heads etc for training but ensure these are well cleaned.

The advice below reflects the relatively low community prevalence at the time of writing; if cases increase within a community or for particular FE bodies it would be appropriate to consider further extending the use of face coverings to a greater range of shared indoor spaces.

Face coverings are most likely to be beneficial as part of a risk mitigation strategy in the following cases:

- During educational activities that require close contact with another person as part of the training (e.g. elements of hair/beauty, health and care or similar courses). It is appropriate for students and staff to follow the equivalent PPE requirements in the relevant professional setting.
- When in indoor communal, laboratory, office, classroom or workshop areas where social distancing is difficult or good ventilation is difficult to provide. This is particularly important in situations where contact tracing may be difficult and where groups of students regularly interact with different groups (e.g. through work placements).
- In indoor settings which could involve enhanced aerosol production, for example through physical exertion, loud speech (presentations, drama production) or singing. Listeners/observers should wear face coverings as well as maintain social distance from the speaker/singers.
- Wider use may also be beneficial in other settings where the wearing of the face covering doesn't interfere excessively with the activity (e.g. in a seminar, tutorial , laboratory practical etc.), particularly if there is an increase in cases of infection among the FE body or higher prevalence in the local community.

Promoting hygiene measures, and communicating about them, will help reassure staff and students. A return to college will be an anxious time for many members of staff and students. For example, students in HE expect hygiene measures to be in place but, as of June, only 1 in 5 reported having very clear communications from their universities on what procedures will be in place.[51] In order to reduce anxiety, it is important to ensure both that measures are in place and that these are well communicated to staff and students.[52]

FE settings should ensure that staff and students are prompted about key behaviours at important moments, are able to perform them, and that environments are redesigned to promote safer behaviour. For example, placing reminders about the need to clean hands and facilities (e.g. sanitizer) for doing so at site entrances[53]; creating one-way systems to reduce face-to-face interactions. Courses involving interaction with tools and objects such as those in workshops/design studios could present a higher surface transmission risk, so cleaning protocols for shared areas and equipment combined with good hygiene training/messaging is important.

[51] R. Hewitt. Students view of the impact of coronavirus on their higher education experience. HEPI Report Policy Note 24. https://www.hepi.ac.uk/2020/06/30/students-views-on-the-impact-of-coronavirus-on-their-higher-education-experience/

[52] Buxton C, Robinson S. What factors or interventions promote or inhibit return to work and public transport use following a major public health incident. Report to SPI-B.

[53] British Psychological Society. Behavioural science and disease prevention psychological guidance: Encouraging hand hygiene in the community. 27 July 2020. https://pure.qub.ac.uk/en/publications/behavioural-science-and-disease-prevention-psychological-guidance

Risks associated with social activities, employment, accommodation and transport

Students who live with parents, grandparents or children may be a point of contact for the FE network and social networks in other communities, including links to other networks through employment. Staff, particularly those with employment at multiple FE settings, may also link networks. As well as increasing connectivity, this may also pose risks for vulnerable household members. Good adherence to COVID security on site and at organised events will minimise the potential for transmission from the FE setting to households and other settings, while flexibility in teaching delivery with online provision for some elements of courses can minimise risks of commuting importing infections.

A broad perspective on reducing contacts between staff and students should be taken. Contacts between staff or students that occur outside of formal settings are just as relevant in spreading infection as those that occur in FE. Attention needs to be paid to reducing contact in teaching settings, but also areas where staff or students may feel able to let their guard down (e.g. staff rooms or social settings). Anecdotal evidence in other contexts (e.g. hospitals) suggests that staff who adhere well to protective behaviours in a formal setting can then engage in risky behaviour in informal settings. Contacts outside of FE are also relevant, and care needs to be taken not to inadvertently increase risk by driving staff and students into riskier environments. For example, closure of canteens or work areas (rather than improving their COVID-security) will be counterproductive if this simply makes students congregate in nearby settings that are less COVID-secure. Discussing these issues with staff and students, and monitoring for unintended consequences, will be important.

In addition to ensuring good environmental controls in buildings, **FE providers working with NIHP should provide clear messaging to their community to enable them to maintain a good level of environmental hygiene**, including cleaning and ventilation. This is particularly important for any shared/communal areas in accommodation, and for shared/communal areas in related workplace settings.

Measures to mitigate transmission risks associated with transport could have a positive impact on limiting spread of the virus, including:

- Adapting schedules/timetables where possible to minimise risks related to public transport – for example scheduling to avoid transport peaks or timetables that reduce the frequency of travel to/from sites over weeks/months.
- Promotion and facilitation of wider transport options and active transport, e.g. supporting cycling and related facilities.
- Clear messaging around safe behaviour on public transport including wearing face coverings and good hand hygiene after travelling.
- Clear policies on use of transport for activities such as fieldwork and business travel that balances risk of transmission against the environmental impact of using private cars.

Consider provision to support staff and students who commute longer distances. Social distancing and reduced transport schedules may affect the ability for students and staff to travel to FE settings and should be considered in timetabling of classes and social events. Students who do not live nearby may require priority access to study spaces during the day. More restricted public transport timetables that are currently in operation may affect the ability for students to attend certain sessions, particularly those in the evenings. There may be greater pressure on car parking (on and off site) if staff and students are cautious about public transport.

Physical and mental health of students and staff

Impacts of COVID may be significant for some staff and students. Evidence indicates that teenagers and younger adults have less severe disease (high confidence). For example, in CO-CIN data those in hospital with COVID-10 aged 50-59 were >2x more likely to die than those under 50, increasing to >10x for those over 80[54]. Deaths in those aged under 25 years are extremely rare. Whilst a large proportion of FE students are in these younger age brackets, a significant number of both students and staff are over 50 and as such may be at higher risk of severe disease (see **Annex A**). Even within the younger age groups, infection could result in significant long-term complications which may be harder to manage in the community[55]. Institutions should pay particular attention to ensuring that both teaching and support staff who are older or who have underlying health conditions are able to work safely.

There is no strong evidence that even younger FE demographics are less susceptible to infection or have a reduced role in transmission than older adults; for example many seroprevalence studies find higher antibody prevalence in younger age groups[56] which likely reflect higher levels of transmission and infection in young adults compared to older age groups.

Circulation of other respiratory diseases may enhance risks and lead to significant staff and student absence. Education settings are widely associated with transmission of infection and have seen large outbreaks of mumps and other respiratory viruses[57]. University based studies suggest vaccine uptake depends on motivation and perception of how beneficial it would be to them[58;]; students were more likely to be willing to get vaccinated where they had been informed that it would protect other vulnerable people.

Although there is not yet any strong evidence for enhancement of SARS-CoV-2 by coinfection with other respiratory viruses, there is not enough to dismiss this; evidence from Australia suggests it seems likely that mitigations to limit COVID-19 have also reduced transmission of influenza and other respiratory viruses. As people return to work and education, respiratory virus circulation is likely to increase, and it is likely that there will be co-infection with influenza over winter, which could create challenges in distinguishing between the two syndromes, with impacts on e.g. test capacity. Approaches such as multiplex testing would be able to detect both infections. In order to protect at-risk groups, maximising and optimising uptake of the flu vaccine this year is important[59].

The wider health impacts from remote learning and isolation must be considered. As well as direct health impacts from COVID-19, there may be physical or mental health impacts from missing education, remote learning or limited access. For example, whilst FE settings and demographics may differ from schools and HE in some ways, the general potential for impacts of COVID-19 on mental health are well described[60], including for

[54] https://www.bmj.com/content/369/bmj.m1985
[55] https://www.bmj.com/content/370/bmj.m3001; recognised in SAGE 34; clear in SARS/MERS e.g. https://www.medicaljournals.se/jrm/content/abstract/10.2340/16501977-2694

[56] E.g. REACT-2 prevalence highest in 18-24 year olds, NHSBT highest in 17-29 year olds, ONS highest in 16-49 year olds – data summary from DHSC, 20 Aug 2020
[57] https://www.gov.uk/government/news/mumps-outbreaks-across-england

[58] Bednarczyk, R. A., Chu, S. L., Sickler, H., Shaw, J., Nadeau, J. A., & McNutt, L. A. (2015). Low uptake of influenza vaccine among university students: evaluating predictors beyond cost and safety concerns. Vaccine, 33(14), 1659-1663. https://doi.org/10.1016/j.vaccine.2015.02.033

[59] SAGE 47
[60] https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)30168-1/fulltext

schools[61] and in some studies and reports for universities[62]. A Covid-19 web survey as part of the UK Household Longitudinal Study found that 36.7% of 16-24 year olds had a "significant level of mental distress"[63]. People who were "economically inactive" (defined as not working and not looking for work, including students) had higher scores than people who were retired or in employment. Changes to the structure of further education may exacerbate these effects by decreasing the ability of people to make friends, engage in social activities together, gossip and chat, and interact with tutors or mentors,[64] as well as by increasing the difficulty of work and studying.

The mental and physical health effects of working or studying from home will add to this. This is likely to have a differential impact on students, widening existing inequalities. For example, students with less access to computer hardware and software at home will experience greater challenges, students with existing mental health needs or disabilities may have greater difficulties adjusting to new forms of learning, staff or students who commute longer distances may face greater challenges with public transport, video conferencing may be less possible or useful for people who do not have a quiet home environment, many adult students may be balancing complex care needs particular adapting to changes in their children's education too. Identifying practical solutions to the challenges staff and students will face in both remote and in-person settings will be necessary (e.g. prioritising the safe re-opening of communal computer rooms, considering how best to prioritise laptop loans to students). Further education providers should be prepared to provide greater, evidence-based support for wellbeing and mental health.

Take into account at all stages of planning provision for students and staff equality and diversity considerations. All measures that FE providers take should be considered in terms of their impact on equality and diversity and the various vulnerabilities of students and staff. This should include all aspects of their activities such as teaching practices, employment requirements (including attendance at work) and COVID-19 codes and regulations.

Communication Strategy

A communication strategy should help to prepare staff and students for new behaviours that are required of them, as well as provide an accurate account of the level of risk involved and the processes that are in place to mitigate risk. This should cover what the official guidelines are and how they are being applied in the FE context; explain the rationale for the guidance, and why adherence is important both for staff and students and for keeping the FE setting open. Guidance should be co- created with staff and students and should support the creation of new social norms. The communication itself should be done by a range of people – including students.

Key principles for communication include:

Involve staff, students and workplaces in co-producing guidance, messages and interventions. Guidance and messages which are co-produced with staff and students are more likely to be effective, more likely to be adhered to, and less likely to give rise to tension

[61] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903374/S0621_Risks_associated_with_the_reopening_of_education_settings_in_Sept.pdf

[62] See Higher Education companion paper

[63] https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)30308-4/fulltext

[64] https://www.smarten.org.uk/covid-19-study.html

or unanticipated problems in implementation.[65] Co-producing guidance is neither costly nor time-consuming. It is important that FE institutions co-produce their guidance by involving staff, students and the organisations who provide work placements. Where relevant, other outside bodies that may be affected (e.g. suppliers, transport providers) may also be involved.

Do not assume that everyone understands the official guidelines. Most people in the UK are willing to adhere to official advice on how to reduce the transmission of COVID-19 and have good intentions in this regard.[66] However, many are confused as to what the current official guidelines are. Knowledge of the guidelines is associated with greater likelihood of adhering to them.[67] Ensuring that staff and students understand the guidelines would be a useful start of year activity. This is likely to be particularly helpful for overseas students: there is a great diversity of global practices around COVID-safe behaviour and this needs to be managed by reassuring overseas students that sufficient care is being taken. As education providers, FE institutions should be well placed to disseminate this information and to check understanding.

Ensure the rationale for behaviours and protective measures is understood. More than knowing what 'the rules' are, understanding the principles that underlie guidance and account for its effectiveness will provide a better motivation for people to adhere to it,[68] accept the legitimacy of guidelines that might be inconvenient for them, and adapt to situations that are not well covered by existing rules. This will be particularly important for students or staff members who encounter potentially risky scenarios away from site, for example in part time employment or while socialising. Students and staff should be made aware of the parameters for mitigation identified in the environment and modelling paper to SAGE: closeness of contact, duration of exposure and use of PPE. Otherwise variations in rules in different FE contexts may appear arbitrary. Providing a guide on "the principles of transmission on control" may help staff and students understand the rationale for particular measures as well as countering false messaging on social media.

Make COVID-secure behaviours the norm. Emphasising that adhering to the guidelines is part of the organisation's culture / identity and is the norm for students and staff within the organisation is likely to promote adherence.[69] This can be achieved by first making the group identity salient – making it a "we" issue.[70] Second, invoking higher order group values ('we care for each other') will help to reshape social practices to make them safer. Third, if this communication is led by students (e.g. student reps or 'champions' for COVID-security), it is more likely to have an impact. Senior and respected members of the organisation (e.g.

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[65] SPI-B. SPI-B Principles for the development of co-creation. 8 July 2020.

[66] CL Atchison, Bowman L, Vrinten C, Redd R, Pristera P, Eaton JW, Ward H. Perceptions and behavioural responses of the general public during the COVID-19 pandemic: A cross-sectional survey of UK Adults. medRxiv. 2020 Jan 1. https://www.medrxiv.org/content/10.1101/2020.04.01.20050039v1. See also LE Smith, Fear NT, Potts HWW, Michie S, Amlot R, Rubin GJ. Factors associated with requesting an antigen test and self-isolating after developing symptoms of coronavirus. Report to DHSC. 2020 July 17.

[67] Smith LE, Potts HW, Amlot R, Fear NT, Michie S & Rubin GJ. Adherence to the test, trace and isolate system: Results from a time series of 21 nationally representative surveys in the UK (the COVID-19 Rapid Survey of Adherence to Interventions and Responses [CORSAIR study]. In preparation.

[68] Reynolds JP, Stautz K, Pilling M, van der Linden S, Marteau TM: Communicating the effectiveness and ineffectiveness of government policies and their impact on public support: a systematic review with meta-analysis. Royal Society Open Science 2020, 7(1):190522.

[69] J. Bavel, Baicker, K., Boggio, P.S. et al. Using social and behavioural science to support COVID-19 pandemic response. Nat Hum Behav 4, 460–471 (2020). https://doi.org/10.1038/s41562-020-0884-z. See also Bonell C, Michie S, Reicher S, West R, Bear L, Yardley L, Curtis V, Amlôt R, Rubin GJ. Harnessing behavioural science in public health campaigns to maintain 'social distancing' in response to the COVID-19 pandemic: key principles. *Journal of Epidemiology and Community Health* 2020; doi: 10.1136/jech-2020-214290

[70] D. O'Connor, Aggleton, J, Chakrabarti, B. Research priorities for the COVID-19 pandemic and beyond: A call to action for psychological science. British Journal of Psychiatry, https://onlinelibrary.wiley.com/doi/full/10.1111/bjop.12468

course leaders, tutors) should also make a particular effort to show that they are adhering to guidance.[71] The use of codes or agreements that are discussed with (and ideally co-produced with) students may help to both reiterate the key behaviours that are expected and to reinforce the fact that these are the norms for the community. Finally, messaging that inadvertently gives the impression that some unsafe behaviours are happening regularly should be avoided.

Encourage a supportive atmosphere. In the general population, the easing of lockdown has been accompanied by reports of anger and confrontation, often triggered by perceived lapses by other people in their adherence to guidelines, perceptions that others are being over-zealous in their adherence, or disagreements on the right approach to easing lockdown. Anger and confrontation has been higher among younger adults and those experiencing financial difficulties due to the pandemic,[72] and is linked to poorer mental health.[73] Stigmatising narratives can arise between different ethnic and social groups especially in the situation of a setting where people are coming together for the first time and are negotiating social rules. Disagreements are also appearing that reflect political leanings.[74] Confrontation and lower adherence to Government guidelines are associated with exposure to conspiracy theories in social media.[75] Effort should be made to encourage students and staff to adopt a supportive, tolerant attitude – accepting that there will differences of opinion, that not everyone can adhere to all guidance, that mistakes will happen, and that no blame or stigma should be attached where people do the right thing by reporting symptoms.[76] Where mistakes or transgressions occur, it is useful to engage, explain or encourage before moving to enforcement.[77] Engagement between FE institutions and the local community will also be needed, to promote a tolerant attitude and to ensure the community is also informed about steps that the institution is taking to remain COVID-secure.

Consistent messaging and guidance is needed. Inconsistent messages can degrade trust, lead to confusion and may reduce adherence.[78] Guidelines should be consistent between departments and sites and between institutional and student-produced material. Where differences are unavoidable, a clear explanation should be given. Consistency between organisations would also be beneficial – differences between two neighbouring FE colleges, or different expectations in different apprentice or work placement providers may lead to confusion. This is particularly true where students and staff mix, either socially, or on shared courses. Communication between local institutions should include a review of guidance to identify any apparent divergences in order to resolve, mitigate or explain them.

[71] LE Smith LE, Serfioti D, Weston D, Greenberg N, Rubin GJ. Adherence to protective measures among health care workers in the UK; a cross-sectional study. https://www.medrxiv.org/content/10.1101/2020.07.24.20161422v1
[72] LE Smith, Duffy B, Moxham-Hall V, Strang L, Wessely S, Rubin GJ. Anger and confrontation during the COVID-19 pandemic; a national cross-sectional survey in the UK. Journal of the Royal Society of Medicine, under review.
[73] LE Smith, Amlôt R, Lambert H, Oliver I, Robin C, Yardley L, Rubin GJ. Factors associated with self-reported anxiety, depression, and general health during the UK lockdown; A cross-sectional survey. https://www.medrxiv.org/content/10.1101/2020.06.23.20137901v1
[74] B Duffy, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. The trusting, the dissenting and the frustrated: how the UK is dividing as lockdown is eased. 2020. London: King's College London. https://www.kcl.ac.uk/policy-institute/assets/how-the-uk-is-dividing-as-the-lockdown-is-eased.pdf
[75] LE Smith LE, Duffy B, Moxham-Hall V, Strang L, Wessely S, Rubin GJ. Anger and confrontation during the COVID-19 pandemic; a national cross-sectional survey in the UK. Journal of the Royal Society of Medicine, under review. See also D Allington, Duffy B, Wessely S, et al. Health-protective behaviour, social media usage and conspiracy belief during the COVID-19 public health emergency. Psychol Med 2020: 1-7. DOI: 10.1017/S003329172000224X
[76] P. Carter, Megnin-Viggars O, Rubin GJ. What factors influence symptom reporting during an emerging infectious disease outbreak? A rapid review of the evidence. medRxiv. 2020 July 23 2020 https://www.medrxiv.org/content/10.1101/2020.07.23.20159897v1.article-info
[77] National Police Chiefs' Council and College of Policing. Engage, Explain, Encourage, Enforce – applying the four 'E's. https://www.college.police.uk/What-we-do/COVID-19/Documents/Engage-Explain-Encourage-Enforce-guidance.pdf
[78] SPI-B. Principles for the design of behavioural and social interventions. Presented to SAGE on 21 April 2020.

Consider the range of cultural backgrounds when developing communications and plans. FE institutions include staff and students from a wide range of communities within the UK. It is essential, therefore, that policies and messages take into account. Obtaining maximum support and adherence from the FE community will require that messages are tested with staff and students from different backgrounds to ensure that wording and concepts are understood, reinforced by people who are trusted, take into account the issues that people from different cultures may face (e.g. religious observances, typical living arrangements), and are sensitive to pre-existing attitudes towards health promotion and health communication. FE providers should make an effort to engage a diverse, representative groups of students to support the above activities, e.g. when developing student contracts/agreements, the rationale for protective measures draws on relevant norms (global – identity; specific – interdependent collective norms), role models, mental health support seeking barriers.[79] Further, detailed guidance is available on this.[80]

[79] H. L. Cheng, Kwan, K. L. K., & Sevig, T. (2013). Racial and ethnic minority college students' stigma associated with seeking psychological help: Examining psychocultural correlates. Journal of counseling psychology, 60(1), 98. See also L. Knifton, Gervais, M., Newbigging, K., Mirza, N., Quinn, N., Wilson, N., & Hunkins-Hutchison, E. (2010). Community conversation: addressing mental health stigma with ethnic minority communities. Social psychiatry and psychiatric epidemiology, 45(4), 497-504

[80] SPI-B, Public Health Messaging for Communities from Different Cultural Backgrounds. Presented to SAGE on 23 July 2020.

Annex A: Characteristics of Further Education settings[81]

The majority of statistics below are provided by DfE and may not cover the entire UK. Data on colleges including FE in Scotland has also been provided and is summarised alongside.

Student numbers and demographics

In September 2019, DfE indicate there were 1.7m students enrolled in FE (Table 2), with around 750,000 aged 16-18 and just under 1 million aged 19 and over. There were 152,900 FE students aged over 50 in Sept 2019. In Scotland, 264,858 students were enrolled in colleges in 2018/19. Of these, 110,000 were aged 19 and under and 154,000 were over 19.

DfE data indicates nearly a quarter of all FE students are from a BAME background, >150,000 students are aged 50+, and over half of adult FE students are from the bottom two quintiles from the Index of Multiple Deprivation. In Scotland, around 6.5% of students are from a BAME background, and over a quarter are from the bottom two IMD quintiles.

DfE report around 20% of FE students self-report having a learning difficulty and/or disability and disadvantaged students are overrepresented in FE. These vulnerable young people are more likely to drop out of FE settings and become NEET (not in employment, education or training) due to issues including mental health and physical barriers to attendance such as availability of devices or transport problems. In Scotland, around 15% of students have a self-declared disability. DfE suggest remote learning is less feasible for many FE students (e.g. those undertaking practical learning, lower level students, those with learning difficulties) which highlights the importance of face to face delivery.

Staff numbers and demographics

DfE data from 2018/19 indicate there were 216,000 staff, including non-teaching staff in the whole FE sector[82]. Teachers in FE are older than in schools; over 50% are aged 45+ and 25% 55+ (vs. 25% 45+ and 7% 55+ in schools). According to DfE data, BAME staff are 'underrepresented' in FE compared to the general working age population in England and Wales. Around 17% of FE staff say they have a disability or health condition, which is far higher than in schools.

Attendance at FE and employer sites and travel patterns

The nature of many FE courses means that not all students may be on site at the same time, but many FE students (e.g. DfE report 19+ apprentices, of which there were 513,000; Table 1) attend other sites such as employer's premises. Due to the huge variation in types of FE learning (e.g. only 3% of 24+ classroom students are full time), DfE estimate that 830,000 to 965,000 students were "on site" each day in September 2019. In Scotland, 27,875 students started Modern Apprenticeships in 2019/20; the top 3 employment sectors were construction and related (23%), sport, health and social care (19.5%), and hospitality and tourism (8.6%).

DfE suggest FE students are reliant on public transport, with July 2020 estimates of 13-21,000 adult students travelling to provider by bus, a further 2-4k by underground, and 7-11k by rail (further detail in Table 3).

DfE indicate around 3,000 FE students live in residential settings on site during the week, predominantly 16-18 year olds.

[81] Data sourced from DfE slide pack presented to SAGE 20/08/2020
[82] https://www.et-foundation.co.uk/research/workforce-data/

Some teachers (DfE indicate 13% based on surveys) work at multiple colleges or training providers.

Table 1: number of students by type of FE, 2019, DfE

FE Learning Type					Total
Apprenticeships	Traineeships	Education and Training	Community Learning	Other	
513,000	5,400	1,112,200	112,400	500	1,743,500

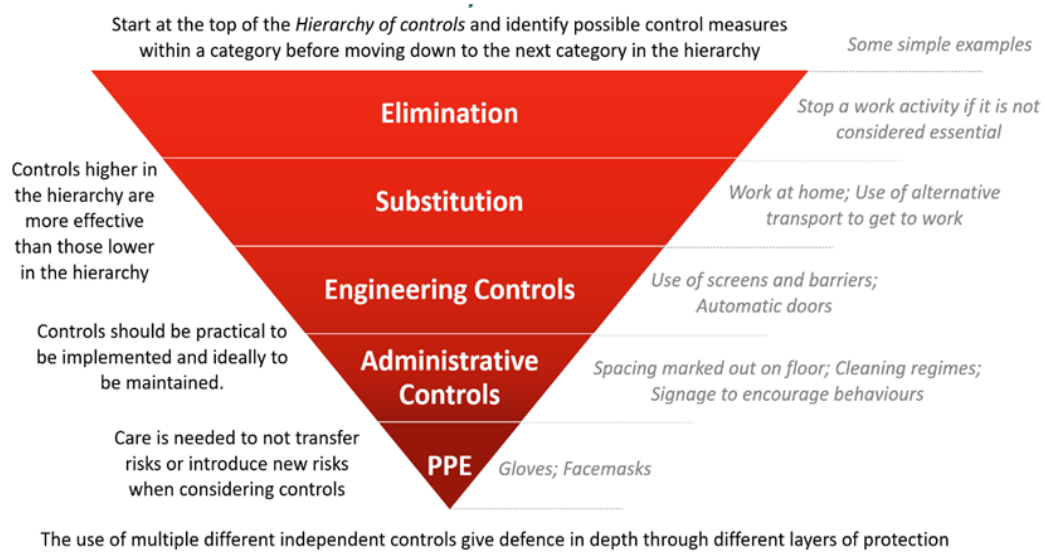
Table 2: FE student demographics 2019, DfE

Gender	Age	White	BAME	Not Provided	Total
Female	16 to 18	273,000	76,000	5,000	354,000
	19 to 23	91,000	25,000	2,000	118,000
	24 to 49	237,000	109,000	12,000	358,000
	50-59	45,000	14,000	2,000	61,000
	60+	36,000	5,000	2,000	44,000
	Total	683,000	228,000	24,000	936,000
Male	16 to 18	306,000	90,000	6,000	402,000
	19 to 23	131,000	30,000	3,000	164,000
	24 to 49	139,000	48,000	8,000	194,000
	50-59	20,000	7,000	1,000	28,000
	60+	16,000	3,000	1,000	20,000
	Total	612,000	177,000	19,000	808,000
Total		1,295,000	405,000	44,000	1,743,000

Table 3: distance travelled from home to FE provider, Sept 2019, DfE

Distance band	Students	%
0-2 miles	632,700	36%
2-4 miles	366,600	21%
4-10 miles	436,700	25%
10+ miles	307,600	18%
Total	1,743,500	100%

Annex B: Hierarchy of Risk Control



Annex C: International comparators:

It is difficult to make direct comparisons to UK FE in many comparator countries, but a number of countries have school or education settings that overlap with some FE demographics. Of these, mitigation approaches vary, for example:

- Australia (12-18): reduced mixing between classes and years; conducting lessons in environments with enhanced ventilation, providing a mix of campus and home/remote education; temperature testing
- France (11-18): mandatory face coverings for those over 11 where distancing not possible
- Italy (14-19): periodic testing of students/staff, and entry of staff/students who have tested positive previously must be preceded with a negative result; mandatory face coverings for those over 6
- South Korea (13-18): health surveys must be completed each morning at home before coming to school – positive answers to displaying symptoms, family members displaying symptoms, or living with someone who has been overseas in the last 2 weeks prevents attendance.
- Sweden (16-18): staggered start times, outdoor classes where possible