MEMORANDUM E (20) 267 (C)

FROM: **ROBIN SWANN MLA**
MINISTER FOR HEALTH

DATE: **19 NOVEMBER 2020**

TO: **EXECUTIVE COMMITTEE**

FINAL EXECUTIVE PAPER: Modelling the course of the COVID epidemic and the impact of different interventions and recommendations.

1. Previous Executive papers have described the course of the epidemic to date and outlined the impact of recent restrictions. As a consequence, the Executive agreed to prolong current restrictions by one week, followed by a graduated reopening of the hospitality sector. Medical and scientific advice provided to the Executive at the time suggested that it was more likely than not that a further intervention would be required before Christmas to prevent the hospital system from being overwhelmed.

2. The purpose of this paper is to update the Executive on modelling of the course of the epidemic and to discuss options which might be available to maintain the position at manageable levels in the immediate run up to the Christmas period.

3. In presenting this paper, I want to highlight two specific issues around its content:

    - As much as we agree that we must be informed by the science, that science, and the modelling, can only support our decision making – there is no one definitive and specific response or guide to the challenges we face; and
    - It is important we learn from our less than satisfactory experience last week, when specific recommendations from me became a dividing line between Executive colleagues. My ambition with this paper is to help the Executive rapidly reach a consensus view on a response.

4. In this context, rather than present one specific recommendation, I am instead presenting, and discussing, the range of alternative interventions open to us.

Current position and likely course of the epidemic:

5. The Executive has been provided separately with the R paper for week 26 which describes the current position. In summary, with schools open and the current restrictions, Rt has settled at around 1, meaning that we are in an

approximate equilibrium with regard to community transmission of the virus. There has been a reduction in cases per day of approximately 50% since the onset of restrictions, but numbers of cases, admissions, hospital inpatients, ICU occupancy and deaths remain at a relatively high level. In particular, hospital inpatients are at a higher level than was reached in wave 1 and are declining only very slowly. As a consequence the hospital system and staff remain under very high pressure.

6. **It is highly likely that the planned relaxations of the next 2 weeks will result in Rt rising significantly above 1, with a subsequent increase in cases, admissions, inpatients, and ICU occupancy becoming apparent in December**. This likely course has been considered by the Modelling Group and is presented in Annex A, Fig. 1.

7. Given that the increase in transmission will occur from a relatively high baseline, it is important to consider now what options may be available to prevent the hospital system from becoming overwhelmed.

Available options to respond to increased transmission:

A) Take no action:

8. As indicated in Annex A Fig 1, if no action is taken the hospital system will be at risk of becoming overwhelmed in mid-late December. Planned activity, some of which will be urgent in nature, will need to be downturned or stopped altogether to allow COVID patients to be cared for. **There will be a significant increase in both COVID and non-COVID deaths**.

B) Impose further restrictions:

9. The only intervention which has been proven to date to effectively reduce transmission of the epidemic involves the use of restrictions. We have previously advised that additional restrictions applied now would make it likely that the need for intervention close to Christmas could be avoided. In order to ensure that this can be achieved, restrictions which will reduce Rt to significantly below 1 and maintain it at that level will be required. A number of options have been considered by the Modelling Group. These are presented in Annex A, in each case showing the consequences for hospital bed occupancy for patients with community acquired COVID. In summary, a two week period of restriction starting on the 27th of November would offer the best prospect of avoiding the need for further intervention before January 2021.

10. Experience during the recent restrictions suggests that non-essential retail / churches contribute around 0.2 to Rt, with opening of schools contributing around the same value. The most effective intervention would therefore involve closing these sectors along with hospitality, close contact services and the leisure and entertainment sectors. The modelling in Annex A shows the impact of this intervention (Figs 2/3), with and without the opening of schools. This means work from home where possible; otherwise stay at home except for essential purposes.

11. In terms of securing maximum public adherence to such an approach, I remain firmly of the view that colleagues in PSNI have an important role to play. I see some merit in legally enforceable localised travel restrictions being introduced to underpin the stay at home messaging. I would be interested in the views of Executive Colleagues in this option or alternative methods of achieving a step change in levels of adherence.

12. **If no intervention occurs in late November, it is likely that even a full lockdown beginning around the 14th December would be insufficient to prevent current levels of hospital pressure being significantly exceeded**. This is shown in Annex A, Fig. 4. A two week extension to the current closure of hospitality would also be insufficient (Fig. 5).

13. It is important to acknowledge that there remains significant uncertainty around likely public behaviours and the impact of other measures discussed below in early/mid December. Better and worse outcomes therefore remain possible. Nonetheless, this remains the best judgement of the Modelling Group based on current evidence. We will continue to keep this under review on a weekly basis.

C) Use of mass testing:

14. There has been considerable interest in the potential of mass testing to reduce transmission of the virus. However, it is important to recognise that this is largely based on theoretical considerations and there has been as yet no clear demonstration anywhere in the world that mass testing can significantly reduce transmission in a short period against the background of a high level of community transmission.

15. Experience in Slovakia suggested in 4 pilot areas that mass testing of the population in a short period of time (with around 90% of adults participating) could reduce the prevalence of the virus by approximately 50%. It is too early to assess the impact of testing in Liverpool. However, it is important to note that only around 20% of the Liverpool population (of circa 500,000) have been tested in a period of 10 days.

16. Mass testing of the NI population aged between 14 and 65 would require around 1 million or more tests to be administered, and all of those testing positive to be supported to self-isolate for a period of at least 10 days in the run up to Christmas. The ongoing ONS survey suggests that around 0.7% of the population would return a positive test, and using lateral flow tests it is likely that at least 30% of cases would be missed due to limited test sensitivity.

17. Modelling suggests that repeated mass testing of most of the population would be required to maintain control of transmission by this means. This would require a very high degree of population buy in and would present huge logistical challenges. Both Slovakia and Liverpool have required military logistical support to deliver their programmes and at least a two week run in

before testing was implemented. It remains unclear whether the required number of tests would be available to NI. This is further discussed in Annex 2.

18. At present, given the uncertainties discussed above, reliance on mass testing alone (i.e. in the absence of significant other restrictions) would represent a high risk approach in the run up to Christmas. In addition, it may not be feasible for logistical or test supply reasons.

19. There may be scope to target more limited mass testing to high risk areas; this would be of help but, again, would not avoid the need for NI wide restrictions at this time.

D) Enhanced adherence and enforcement in relation to existing measures:

20. As discussed in previous papers, available evidence shows that compliance with all aspects of existing restrictions is declining, particularly in younger segments of the population and those living in areas of social deprivation. There are likely to be multiple reasons for this, but in particular younger people do not perceive themselves to be at significant risk of adverse outcomes if they are infected and perceive the restrictions as placing overly onerous demands on their lives.

21. UK evidence suggests that adherence to advice from TTP to self-isolate is relatively poor, and there is little reason to believe that adherence is better in NI.

22. Both incentives and penalties / enforcement have a role to play in reducing transmission of the virus, and this would is being taken forward separately. While this will be of benefit, there is little evidence to expect it will have sufficient impact to reduce virus transmission to the required degree on its own.

E) Increased hospital capacity

23. In theory, measures to increase hospital capacity would allow an increased epidemic level to be managed, but this would inevitably be associated with increased deaths and might be limited by the need of staff to self-isolate as a consequence of healthcare related outbreaks in hospitals or clusters and outbreaks in the community. It is also the case that the associated levels of community transmission would inevitably result in a further significant increase in outbreaks in care homes among extremely vulnerable older people as was experienced in the first wave, which will result in excess deaths in this population.

24. However, for practical purposes it is simply not possible to increase hospital capacity in the short to medium term. The key factor here is the supply of staff, and given the specialist skill set required, there is a very long lead time for this. While some marginal gains in capacity can be made in specific areas (e.g. ICU), this comes at the cost of reduced capacity elsewhere in the system, as it involves the redeployment of existing staff. In addition, when doubling time for cases is 7-10 days, even a doubling of hospital capacity (unlikely to be

achievable) would buy only a limited period of relief before intervention was required.

F) Reintroduction of shielding for Clinically Extremely Vulnerable (CEV) people (Annex C):

25. A reintroduction of shielding for CEV people could reduce pressures on the hospital system and may reduce mortality. However, this would require considerable sacrifice on the part of those shielding and those protecting them over a significant period of time, with adverse impacts on their physical and mental health and well-being. In Northern Ireland, c200,000 people were advised to shield in the first wave of the pandemic, a significant proportion of the population as a whole. This list has grown since then with the addition of people with chronic kidney disease, and adults with Down's syndrome to the CEV list, based on emerging evidence on what groups are most at risk from Covid-19. A combination of this approach with some restrictions would allow more relaxed behaviours on the part of the younger part of the population (under 60s) but to avoid risk would require no mixing with the older population. This is not considered feasible in practical or behavioural terms, and would be a particularly difficult strategy over the Christmas period.

G) Vaccination (Annex D):

26. There is no doubt that a successful vaccination programme represents the best exit route from the current epidemic. Early results from vaccine trials (Pfizer and Moderna) are very encouraging, and we remain optimistic that some vaccine doses will be available for the Pfizer vaccine in December. However, it is important to recognise that this vaccine requires the administration of two doses at least four weeks apart, and that immunity (when achieved) will not be apparent for 4-5 weeks after the administration of the first dose. Therefore, there is no possibility that vaccination will obviate the need for additional measures / intervention before Christmas.

H) Test, trace, protect:

27. The Executive has been advised previously of the extensive developments which have taken place in the TTP service to improve capacity and efficiency and maximise impacts on transmission. We will continue to build on these developments, including enhanced / reverse contact tracing (Annex E). However, it is important to recognise that no TTP service can successfully suppress transmission when community transmission is at a high level. For example, the system in Germany (widely considered to be the best in Europe) was unable to cope once cases exceeded 50 / 100k / 7 days, far below current NI levels. In this context TTP will not be able to sufficiently suppress community transmission in the absence of additional restrictions.

Summary:

28. In summary, the advice of CMO and CSA remains that additional intervention in the form of restrictions is required before Christmas to avoid the risk of the hospital system becoming overwhelmed. Two weeks of restrictions beginning on 27th of November appear to be the most effective option in terms of reducing virus transmission.

29. A range of other options are considered above. I have already taken steps to urgently explore the possibility of mass testing as discussed above (copies of correspondence to Matt Hancock and the First Minister and deputy First Minister earlier today are attached for information) and in addition all possible efforts to improve adherence should be pursued. However, we do not believe it is likely that the need for additional intervention can be avoided through these measures in light of the current position.

Recommendation

30. It is recommended that the Executive considers the information above, and concludes on the appropriate response.

31. I am copying this paper to the Attorney General and Departmental Solicitor, and to First Legislative Counsel.

ROBIN SWANN MLA

MINISTER OF HEALTH

Annex A: Modelling results

Fig 1:

Scenario #1: Do nothing

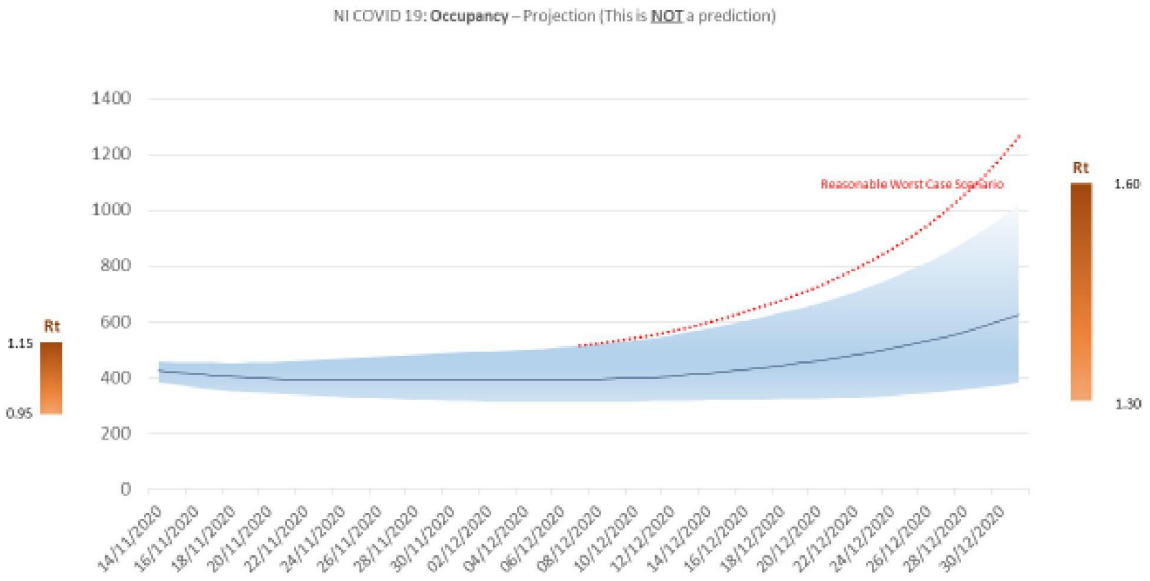


Fig 2:

Scenario #2: 2 week restrictions commence 20/11/2020 and full opening thereafter

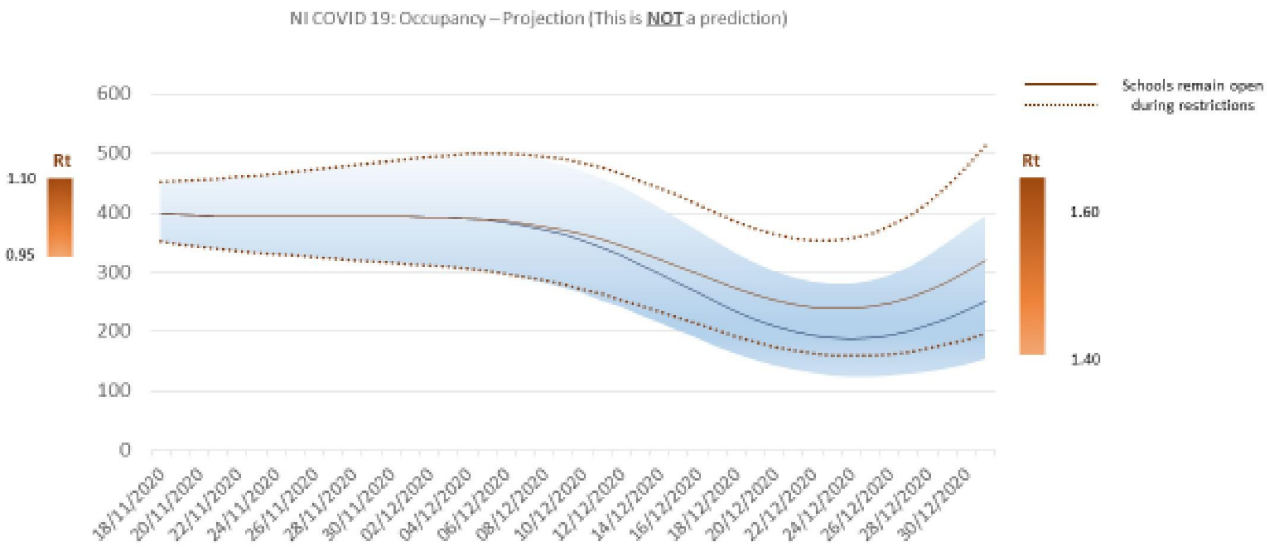


Fig 3:

Scenario #3: 2 week restrictions commence 27/11/2020 and full opening thereafter

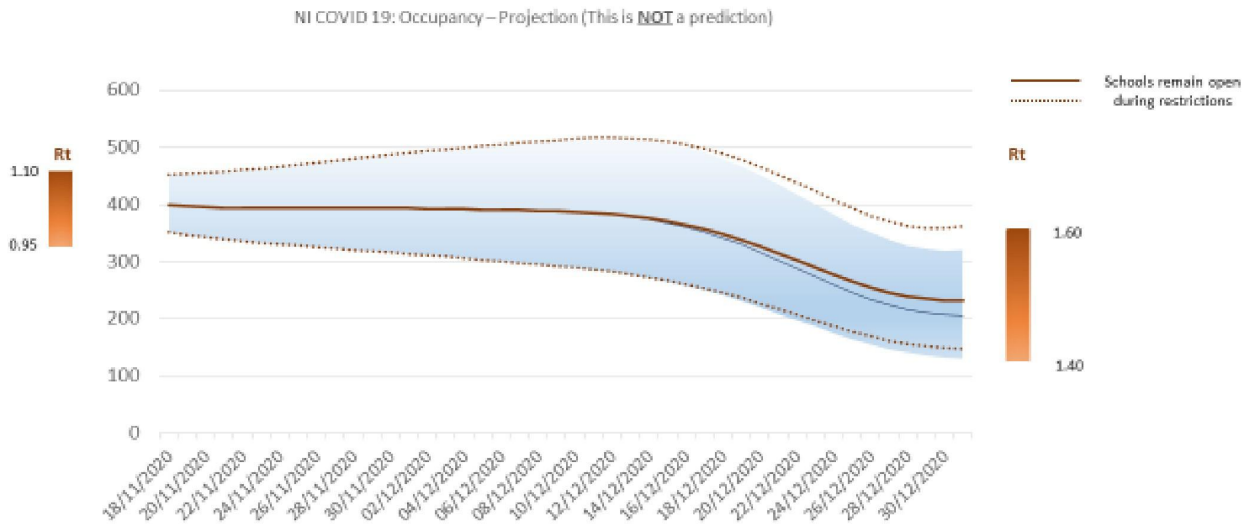


Fig 4:

Scenario #4: Hospitality opens 27/11/2020 & full restrictions (including schools) introduced from 14/12/2020

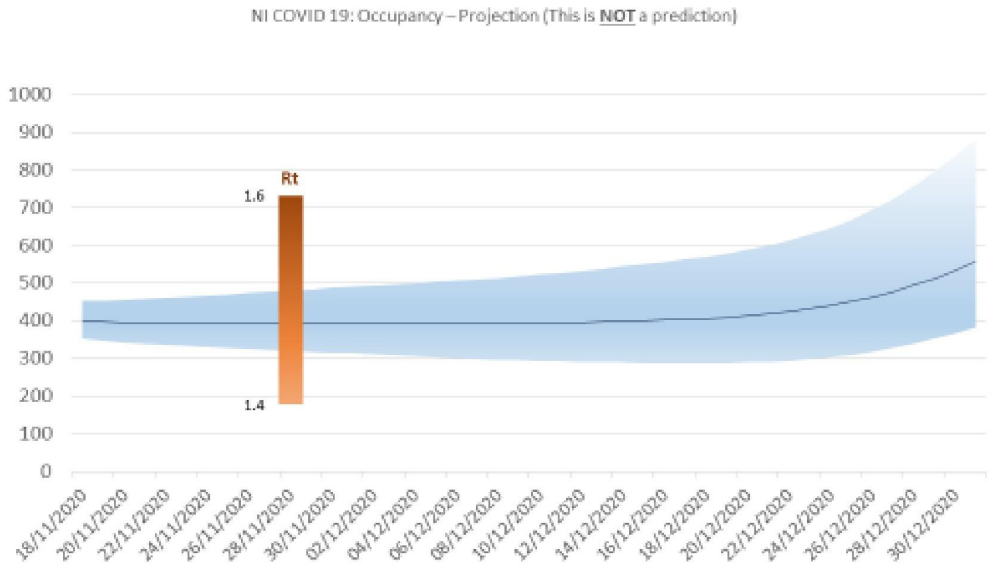
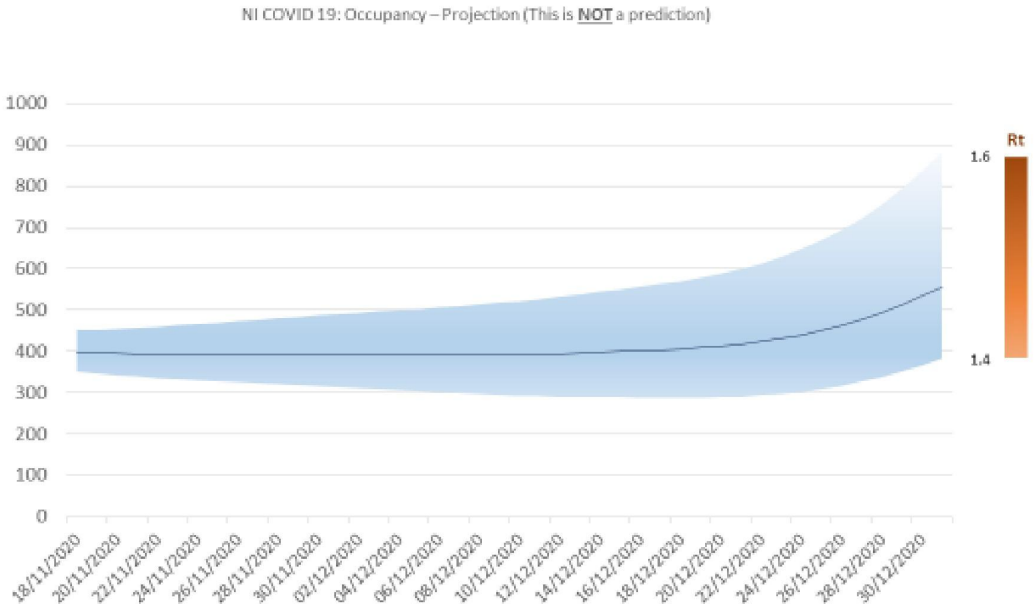


Fig 5:

Scenario #5: Hospitality remains closed for further two weeks reopening 11/12/2020



Annex 2: Mass testing

Background

1. Mass testing would involve asking everyone in Northern Ireland to be tested whether or not they have symptoms. A key aim is to test those that are asymptomatic in order to identify those that are infected but not yet displaying symptoms, directed those people to isolate and help break the chain of infection and prevent further spread the virus.

2. Generally in Northern Ireland people can only currently have a test if they already have symptoms. Testing of those that are symptomatic would continue through existing channels.

3. People could be offered a test on a voluntary basis in which case it will be important to design and clearly communicate a series of strong incentives and encouragements to secure optimum uptake. Opting to make mass testing mandatory would require infrastructure to monitor compliance and enact enforcement.

Testing kit - Lateral Flow Devices

4. Mass testing in Norther Ireland will be rolled out using Lateral flow devices (LFDs). These are simple devices intended to detect the presence of a target substance in a liquid sample without the need for specialized and costly equipment. They work in a similar way to home pregnancy kits. Lateral flow tests do not require laboratory processing, with results usually available within an hour of the testing being taken. DHSC London has purchased a significant volume of LFDs which will be made available on a population share basis to Northern Ireland the other Devolved Administrations.

5. The current PCR test remains the gold standard to diagnose current viral infection. Lateral flow devices (LFDs) have a lower sensitivity (ranging from 64% to 96% with sensitivity highest when cases have a high viral load and are therefore most likely to be infectious) and lower specificity (between 98 – 100% in initial trials) than PCR tests. However, while LFDs are less accurate they do not require laboratory processing and results are available within an hour of the test being taken. Due to their characteristics, LFDs will help identify those that are most infectious and therefore most at risk of spreading the virus; which will help break chains of transmission.

6. Due to the lower sensitivity levels using lateral flow tests it is likely that at least 30% of cases would be missed due to limited test sensitivity. Testing everyone twice within a 3-5 day period would largely mitigate the lower sensitivity (effectively to the same level as a PCR test); however, that increases significantly the logistical challenge.

Logistical Planning and Delivery

7. Documented, systematic learning is not yet readily available but some early learning emerging from the experience in Liverpool and Slovakia indicates that a period of at least two weeks planning is key to successful delivery of a mass testing programme.

8. There are many planning and logistical challenges that must be overcome and both Liverpool and Slovakia have utilised the army in initial phases of planning and delivery. Plans are underway in Liverpool to transition to a civilian workforce to manage the Asymptomatic Test Sites (ATSs).

9. Some key early learning and challenges includes but is not limited to:

- Location selection and setting up of test sites (for example, temperature conditions to facilitate testing);
- Selection and training of workforce, mix of voluntary and paid roles;
- Kit, PPE and other materials ordering and delivery;
- Clear, coherent and timely communications: needs to be aligned from macro level communications (for example, why and who are we testing) through to micro level (for example, site signage and directions) key to establishing and retaining momentum and confidence;
- Communications and engagement approach is key and must be sustained; finite period to gain and not lose mass confidence, trust and momentum;
- Short window to optimise communications – if don't grip attention and maximise uptake, or if do manage to encourage strong uptake and don't maximise (for example through slow registration processes and poor queue management at sites leading to negative word of mouth feedback), can be very difficult in short period of time to gain/ regain trust and confidence in aims and in rollout of the program;
- Site management, registration and queuing are key to on site success;
- Due to short window for testing, key that scope and authority of decision making tiers is clear and agile (for example, decision making roles of central government and that delegated to partners);
- Data connectivity at sites (must be wifi enabled) and data flows / reporting to facilitate systematic data analysis to aid further targeted activity in higher prevalence areas;
- Slovakia used a paper based systems; Liverpool is online only with no identifiable data held at sites (bar codes only);
- Pre-booking system vs Walk-in only;
- Identify and overcome barriers to optimise uptake (Liverpool programme report at high level that there is has testing capacity of 40k per day but currently only testing 7/8k per day);
- Reported that difficult to understand the behavioural motivations: primary incentive appears to social responsibility; some may be coming forward out of curiosity knowing not likely to be symptomatic; some early considerations in Liverpool that it is proving difficult to penetrate the higher prevalence areas (potentially less likely to come forward as will have to self-isolate if positive and impact on employment etc); and
- Links to Contact Tracing.

Partnership working and Multi-Agency Delivery

10. To successfully deliver a mass testing programme will require significant input and assistance from officials in a number of NICS Departments and partnership working with external bodies, for example local council offices and community and voluntary sectors. In Health, this will require building on existing infrastructure and networks maintained by HSC Trusts and by the Public Health Agency. Successful rollout at the pace required will be critically dependent on the willingness and readiness of partners, including those in other Departments, to prioritise and resource their input to this work, which will at times be significant.

Approach to Mass Testing

11. There are different approaches to how we best deploy the mass testing program. These include but are not limited to testing the whole population once, optimising participation; test the whole population twice within a week, again optimising participation; test smaller populations by distinct geographies (possibly Local Government District area) and building-in elements of serial testing for example to further target higher prevalence areas.

12. Sufficient planning time will best allow for a holistic approach which integrates wider population level testing with more discrete use case pilots in order to maximise benefit and learning. This could include for example aligning and building on existing pilots already underway or in planning in Northern Ireland.

13. These include:

- Regular testing of hospital and care staff in a range of care settings;
- Testing in schools and schools and universities where the virus can spread; and
- Testing in industry or workplaces.

Annex C: Advice to Clinically Extremely Vulnerable (CEV) people

- Shielding for Clinically Extremely Vulnerable people was paused on 31 July.

- At the point when shielding was paused, c200,000 people had been in receipt of a letter advising them to shield. Since then, the CEV list has grown by the addition of chronic kidney disease, and adults with Down's syndrome, based on evidence emerging from the QCovid model.

- It is recognised that whilst shielding is effective at protecting people from the spread of the virus, it comes at a cost in terms of the impact of isolation on the mental health of individuals who have been shielding. Research conducted by the Patient Client Council in Northern Ireland indicates that 40% of respondents mentioned negative impact of isolation or loneliness; with 1 in 3 people referencing the effects of shielding on their mental health and emotional wellbeing.

- Any proposal for a return of shielding for CEV people would need to carefully weigh the potential benefits in protecting them from exposure to the virus, against the potential negative impact on their mental health.

- Advice to CEV people has been kept under continual review, with a dedicated CEV Cell established to ensure focus on this key group. Advice was reviewed most recently on 17 October, when restrictions were introduced across Northern Ireland. At that time, it was decided that advice to CEV people did not need to change, on the basis that adherence to the guidance for the whole population would provide sufficient protection for CEV people. Updated advice was placed online at https://www.nidirect.gov.uk/articles/coronavirus-covid-19-guidance-clinically-extremely-vulnerable-and-vulnerable-people.

- This positon was in line with advice to CEV people across the UK more generally.

- Since then, advice for CEV people in England has been amended in line with the new National Restrictions which took effect from 05 November.

- The new advice is more restrictive than the advice currently in effect in Northern Ireland, with CEV people being advised

    - to stay at home as far as possible, going outdoors only for exercise or for essential health appointments.
    - not to attend work if they cannot work from home
    - not to go to shops or to the pharmacy

    People who cannot attend work due to this advice may be eligible for statutory sick pay, as well as ESA or Universal Credit.

- In Scotland, it was announced on Tuesday 17 November that 11 council areas would be placed into Protection Level 4, which entails a change in advice to CEV people in the areas affected. The key difference from the current position

in Northern Ireland is in relation to work: under Level 4 in Scotland CEV people are advised not to go to work if their workplace cannot be made Covid-secure. In such circumstances, as in England, people may be eligible for statutory sick pay as well as ESA or Universal Credit.

- Advice to CEV people in Wales is currently unchanged.

- The positon in relation to advice to CEV people across the UK is summarised in the table at Annex A

- In the first phase of the pandemic, support for shielded people was coordinated by Department for Communities, in partnership with local councils and the community and voluntary sector. Support available included priority access to online grocery shopping, food packages and help with accessing medicines. The C&V sector have raised concerns about their capacity to support people should shielding be reintroduced, due to limited numbers of volunteers.

- Any proposal to reintroduce shielding for CEV people runs the risk of placing an additional burden on the most vulnerable people in our society, and should therefore be given careful consideration.

Table 1 – comparison of advice to CEV people across UK

	Northern Ireland	England	Scotland (level 4)	Wales
General Advice	Limit household contacts Wash hands well and often Follow social distance guidelines Use face coverings Individuals advises to assess risk and take advice from GP/ Clinician	Stay at home as much as possible, except to go outdoors for exercise or to attend essential health appointments. Can meet up with one other person from outside your household or support bubble to exercise outdoors. Keep all contact with others to a minimum and avoid busy areas. Maintain strict social distancing. Wash hands regularly and avoid touching your face. Try to stay 2 metres away from other people within your household.	Minimise contact with people outside household	Keeping contacts to a minimum. Washing your hands regularly. Cleaning surfaces regularly and avoid touching surfaces others have touched. Planning ahead before going out. Consider what time of day you go out and where you are visiting e.g. avoid supermarkets during peak times.
Work	If possible, work from home. If proper measures are in place in work place, you can continue to go to work.	You are strongly advised to work from home.	At Level 4 the Chief Medical Officer will issue a letter which is similar to a fit note and which will last for as long as your area is under	Work from home, where you can. Review any risk assessment with your employer to

	If concerned about safety of workplace, speak to employer/ HR.	If you cannot work from home, then you should not attend work. CEV people who cannot work outside home are eligible for statutory sick pay (SSP) purposes.	Level 4 restrictions. This letter can be used in the few cases where it is not possible to make your workplace safe. Please note that this does not automatically mean you should not attend work.	ensure all COVID safety measures are being observed. Discuss start and finish times to help avoid using public transport at peak times.
Travel	Walk or cycle if possible. Avoid public transport Avoid car sharing with people outside household/ bubble	Avoid all non-essential travel by private or public transport, this includes not travelling to work, school or the shops. You should still travel to hospital and GP appointments unless told otherwise by your doctor.	Avoid public transport.	Walk or cycle if possible. Minimise the number of people you come into close contact with. Avoid sharing a car with another person outside household/ bubble
Shopping	Go shopping at quieter times of day	Avoid going to the shops. Use online shopping if you can, or ask others to collect and deliver shopping for you.	Shop at quieter times. Strictly follow the guidelines when shopping and limit the number of times you go to a shop.	Shop online where possible.
Pharmacies	Ask family/ friends/ volunteers to collect medicines	Avoid going to a pharmacy.		

		Ask a friend, family member, carer or a volunteer to collect medicines		
School	Previously shielded children can attend school. Schools to determine individual risk and mitigations.	Most children originally identified as clinically extremely vulnerable can attend school. Children whose doctors have confirmed they are still clinically extremely vulnerable are advised not to attend school whilst this advice is in place. Your school will make appropriate arrangements for you to be able to continue your education at home. Children who live with someone who is clinically extremely vulnerable, but who are not clinically extremely vulnerable themselves, should still attend school.	Children on the shielding list should not attend in person.	The great majority of children who had originally been identified as CEV have now been advised they do not need to shield if this is advised again in the future, and can attend school.

OFFICIAL - EXECUTIVE

Annex D: COVID-19 Vaccination Programme for Northern Ireland

1. One of the leading vaccines secured for use in the UK from BioNTech/ Pfizer has completed the final phase 3 trials and is expected to submit full safety and efficacy data to the MHRA shortly. Initial results published by Pfizer are very promising and indicate the vaccine may by close to 95% effective. The UK is expected to receive 40 million doses of this vaccine over the period December 2020 to September 2021. The NI share of this will be around 1,140,000 doses over this period. This vaccine requires 2 doses to be administered

2. The second leading vaccine from AstraZeneca is expected to submit its data to MHRA by early December and the UK is expected to receive 100 million doses of this vaccine over the period late December 2020 to June 2021. The NI share of this will be around 2,850,000 doses. This vaccine also requires 2 doses to be administered

3. The MHRA is expected to rapidly assess the information from the vaccine companies and will then make a decision as to whether or not to grant the vaccine(s) authorisation, which would enable them to be administered in the UK. It is therefore very possible that an authorised, highly effective vaccine, could be available for use in Northern Ireland during December.

4. Vaccination plans in NI are now at an advanced stage and will be delivered over a number of phases. The prioritisation of the vaccine will be based on the recommendations and advice provided by the independent Joint Committee on Vaccination and Immunisation (JCVI). JCVI will also advise on which COVID-19 vaccine(s) should be used on the priority groups based on the best available clinical, modelling and epidemiological data.

5. JCVI have already issued an interim prioritisation recommendation which is very age related with older adults being considered most at risk, however JCVI will make its final recommendations based on the full safety and efficacy data submitted by the vaccine companies.

6. A summary of the planned vaccination programme in Northern Ireland is set out below. Each phase is likely to last around 8 weeks to allow for an individual to receive 2 doses of a vaccine 28 days apart:

   Phase 1 will include all care home residents & staff, all Health and Social Care workers as well as all those aged 80 years of age and older. This will cover around 200k individuals and may run from Mid-Dec to Jan/mid-Feb.

   Phase 2 will include everyone aged between 65 to 79 years of age as well as all those aged under 65 in an 'at risk' group. This will cover around 455k individuals and may run from Mid-Feb to mid-April.

   Phase 3 will include everyone aged between 50 to 64 years of age which is around 366k individuals and will run from Mid-April to mid-June;

Phase 4 may cover the rest of the population aged 18 to 49 years of age which is approximately 366k individuals but this will be subject to further recommendations from JCVI; and

Phase 5 will be the long term arrangements for a vaccination programme for all or specific groups of the population as recommended by JCVI.

7. The vaccination plans will involve a mixture of delivery models, including mobile teams that will target Care home residents and staff as well as roving teams to support district nursing to reach house bound patients. Enhanced Trust Occupational Health teams that will operate at a number of fixed mass vaccination sites in order vaccinate all HSCWs. A GP led programme which will see eligible patients being invited to a vaccination site by their GP based on the phases outlined above. This may involve GPs operating in large cluster formations with additional support staff being provided.

8. An Expression of interest to all registered health care professionals (e.g. Pharmacy, Nursing, Dentist and AHPs) to become sessional vaccinators has been issued and there has been a very encouraging response. This is in addition to the normal GP workforce and the Trust's 800+ flu peer vaccinators.

9. Due to logistical issues with the Pfizer vaccine it may not be possible to use it in a Care Home or GP setting and therefore these elements of phase 1 will begin if/when the AstraZeneca vaccine becomes available or if further test results enables a wider deployment of the Pfizer vaccine.

10. Based on the numbers to be vaccinated it is likely to be late spring/early summer before the programme has a significant effect of the level of COVID-19 circulating in the community.

Annex E: Enhanced Contact Tracing

1. Enhanced contract tracing, otherwise known as backward or reverse contact tracing, was introduced by the Public Health Agency on 16th November 2020 as part of the on-going improvement measures to the contact tracing delivery model.

2. In comparison to conventional contact tracing, which is forward looking and aims to identify the case's close contacts, enhanced contact tracing is aimed at identifying the source of a case's infection. It is intended that the combination of conventional contact tracing and enhanced contact tracing will increase the contribution of contact tracing to the control of community transmission in NI.

3. Enhanced contact tracing will build on arrangements already in place in the contact tracing system and in the management of clusters and outbreaks of COVID-19. Whilst it is too early to make an informed assessment of the benefits of enhanced contact tracing in Northern Ireland, experience from other countries has shown that it will add to surveillance/situational awareness regarding outbreaks and chains of transmission of infection. Over the coming weeks it is expected that this approach will further improve the ability of the contact tracing service to detect the source of potential clusters of COVID-19 in community settings, which will in turn inform and support public health action to stop the transmission of infection.

4. Recent developments to the contact tracing system have had a positive impact on the level of service with reduced times involved for contacting both the index case and their contacts. However, the contact tracing service is continuing to look for ways to improve efficiency and quality and to find innovative digital solutions. Increasing public understanding and trust of the contact tracing model in NI will be essential to its success over the coming winter months in promoting higher uptake of the StopCOVID NI apps and the Digital Self Trace platform. A mass media campaign is currently being developed to optimise all of the different components of the Service, and in particular to increase the public's awareness of the benefits of Digital Self Trace.