FROM THE MINISTER OF HEALTH

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TO: EXECUTIVE COLLEAGUES

USE OF BUBBLES AS A WAY OF FACILITATION SOCIAL CONTACT

In the course of last Thursday's Executive meeting, there was considerable discussion around our approach to the use of "bubbles", as part of our phased approach to relation of restrictions on social contact.

I am conscious that, although I have not received any proposals from colleagues, incorporating the completion of the relevant template as was agreed by the Executive, this issue is likely to be raised again at tomorrow's discussion.

In that context, I thought it would be helpful to circulate a paper reflecting the thoughts of the Chief Medical Officer and Chief Scientific Adviser. This is attached at Annex A.

I hope this is helpful.

Personal Data

Robin Swann MLA
Minister of Health

Annex A

Bubbling – epidemiological and behavioural considerations

1. A bubble is an exclusive social network. Members of a bubble only have physical contact with each other, limiting their likelihood of exposure to the coronavirus. If anyone in a bubble displays COVID-19 symptoms, then the entire bubble will quarantine itself, thereby preventing onward transmission of the virus.

2. In order for a bubble to be effective in the fight against coronavirus, it is crucial that it remains exclusive. Given that coronavirus can be transmitted by carriers in the absence of symptoms, it is only by ensuring exclusivity in social networks that the virus can be effectively contained, and its onward transmission curtailed.

3. The introduction of limited bubbling at a time when full lockdown is in place is likely to bring greater benefits and to be associated with lower relative risks due to stricter limitations on contacts outside the bubble being in place. Risk is also likely to be lower when activity of the epidemic is at a low level. It is important to consider the cumulative impact of reducing restrictions – introduction of bubbles, particularly larger ones, in parallel with relaxing other restrictions will increase risk.

4. In general, the **households** most likely to benefit most from bubbling arrangements would be those:

    a. having practical difficulties (e.g. childcare, shopping, household tasks, repairs);

b. suffering from stress (due to financial difficulties or lack of connectedness – e.g. digitally disenfranchised);
c. socioeconomically disadvantaged and minority households; and
d. with mental and physical health or disability issues.

5. The balance of risks and benefits to **individuals** in relation to bubbling is likely to be more complex, particularly in larger bubbles. Gendered differences in care-work and housework mean that women bear the greatest burden for provision of care both paid and unpaid, a burden that is reported to be increasing in the COVID-19 pandemic. The extension of networks might bring even more work of this kind to women as they care for elderly relatives or other people's children. In addition household decision making in general and specifically on physical and mental health practices does not always follow a model of consensual negotiation. Therefore within families particular individuals may push for their needs to be met through social networks at the cost of other individuals. This is likely to disadvantage women, children and young adults. On the other hand, there is contrary evidence that an extension of social networks may help women and children in acutely abusive situations. In addition there are clear benefits for children, teenagers and young adults in extending networks for play and friendship.

6. Therefore, at the **individual** level extending social networks will have mixed outcomes on well-being. These outcomes will depend on the gender and age profile of households, how care-work is organised within them, how their decision-making processes are negotiated and the nature of the relationships within them.

7. Decisions about which households or networks to bring into a bubble, which by definition should be of limited size, may also be difficult and has the potential to bring considerable pressure to bear on individuals considering bubbling and to damage relationships. The decision over which bubble to join (if any) may have the potential to create friction and fragmentation in community, family and friendship circles. For example:

- An individual or a household wishes to bubble with another individual or household but cannot proceed because the other individual/household formed another bubble;
- Individuals or households feel forced to bubble with family members who cannot offer the same support (e.g. childcare, social) as non-family groups;
- Bubbling with older family groups removes opportunities for children to play/develop social skills with their peer groups;
- Bubbles have significant variations in power and access to resources;
- Bubble membership is not completely voluntary;
- The exit costs are too high;
- A family with older/younger children can only bubble with the friends of one of the children; and
- People do not want to bubble with families containing younger children or keyworkers because of the risk of symptoms shutting both families down.

Experience with bubbling elsewhere

8. Bubbling has been used in a few countries and regions around the world (principally New Zealand, Belgium, Guernsey and two

provinces of Canada). Since each country differs in terms of culture, social behaviours and the activity and pattern of the epidemic it is unlikely that any of these examples can be directly compared with NI.

9. The best studied and most widely discussed example of bubbling has been New Zealand, where the concept of a 'bubble' was used as a simple message to emphasise the need to reduce contact during lockdown. Initially, your bubble was your own physical household. Messages emphasised that interacting with people outside of your household put your bubble and everyone within it at risk. As New Zealand's lockdown started to lift, people were allowed to slightly extend their bubbles. A household could merge with one other household. Initially people were instructed to stay at home in their bubble other than for essential personal movement (e.g. to seek medical assistance, buy groceries, or travel to work if employed within essential services). At a later stage reasons for leaving the bubble were broadened, but essential to the success of the concept was that interactions with individuals outside the bubble were kept to an absolute minimum.

10. Childcare buddies were one type of bubble which was allowed to facilitate informal childcare arrangements for essential workers. Commonly, childcare buddies were grandparents or other family members, but this was not a requirement. Childcare buddies were not allowed to have other contacts beyond the household in which they were providing childcare.

11. At a later stage, New Zealand bubbles were allowed to expand beyond two households. This option was taken up only by a minority of bubbles. Settings in which larger bubbles developed included:

- household groups in which childcare was shared across networks of coparents;
- polyamorous relationships;
- bubble members having to work during Level 3, which they felt had forcibly brought them into their colleagues' bubbles;
- strong political objections to the very concept of lockdown.

12. In general, bubbling in New Zealand was felt to be useful and effective in reducing social isolation and addressing childcare needs, though adopted only by a minority of the population. Bubbling was treated seriously by those participating and was accompanied by high adherence to good behaviours and exclusivity within the bubble. The core message guiding people in how to merge their bubbles was to keep it local, small and exclusive.

13. Of particular note, key worker households tended to choose not to connect with others in order to avoid potential spread of the virus.

Potential impact of bubbling on R

14. Clustering of contacts within social bubbles can be an effective means of controlling any increase in R while allowing more contacts. Lockdown was intended to create bubbles of one household, and this has recently been extended to include a household of a single person and a second.

15. In order to be effective, no person can be a member of more than one bubble, all individuals in one household must belong to the same bubble, and the bubble must contain the same individuals for the foreseeable future. Even small breaches of bubbles bring a significant risk of increasing transmission.

16. For bubbles to be effective, policies on household quarantine would need to apply to all members of the bubble. For example, if one member of the bubble develops symptoms, all members of the bubble would be expected to quarantine, not just those in the same household.

17. The impact of bubbling will be dependent on measures elsewhere in the community, and adherence to these measures. As other measures are relaxed, the estimated impact of bubbling on R rapidly increases.

18. Households may also be advised to avoid bubbling with groups perceived to be at higher risk in terms of contact patterns or clinical vulnerability (e.g. key workers and those shielding respectively). This would reduce any negative impact of introducing bubbles.

19. There is a clear differential in the individual risk from bubbling: a household of one or two vulnerable people will be at significantly higher risk when bubbling than a younger couple, single person, or even single parent with a child or young children.

20. Allowing bubbles to span across small households, even with very high uptake, will have a measurable but not particularly large effect on R.

21. Some targeted approaches will only generate a marginal increase in R, including pairing of single-occupancy households. Strategies pairing dual-occupancy households, or a single-person household with another of any size, are also unlikely to increase R above one, providing that overall reproduction number before their introduction is around 0.8 or less.

22. Bubbles involving larger households are more likely to result in R increasing above one. This may be mitigated if restricted to single parents with a primary school age child joining with other households including primary age children.

23. The impact of a policy on bubbling is highly dependent on several factors, including but not limited to the size and nature of bubbles; uptake of bubbling by households; the interaction with other policies in place; and how strictly rules about exclusivity of bubbles are adhered to.

24. Any policy on bubbling needs to consider the degree of risk for occupants of households that may be involved in bubbling. For example, a household of one or two vulnerable people will be at significantly higher risk when bubbling than a younger couple, single person, or even single parent with a child or young children.

A suggestion for a phased introduction of bubbling

25. Based on the considerations outlined above, the scheme below would allow for the phased introduction of bubbles with relatively low risk in epidemiological terms. **A period of 2-3 weeks would be required between phases to properly assess the epidemiological risk - proceeding more quickly than this, or combining phases, would be possible but would come with increased risk**.

26. Introducing bubbling in parallel with other proposals which significantly increase social contact by members of bubbles will increase the risk of bubbling in unpredictable ways.

Phase 1 Two households, the first with only one individual member and the second with any number of household members, joining together. (Plus continuation of currently permitted links between ex-partners for childcare)

This must be preceded by safe working environments for key workers, effective contact tracing technology & extensive testing. It should be accompanied by guidance on how to negotiate bubbles, emphasis on the use of bubbles for responsible care, strong public health communications about hygiene and risk, and small groups in outside spaces.

If no epidemiological adverse effects then move to:

Phase 2 Two households joining together regardless of number of members, accompanied by continuing messaging as per Phase 1.

If no epidemiological adverse effects then move to:

Phase 3 Households who had added lone members to also add a third larger size household.