

assess the effects of individual policy changes on R if multiple changes are introduced together.

30. Mitigation of these risks would require very careful policy design. Key mitigations will include maximising adherence of those within bubbles to other measures and maintaining exclusivity of bubbles (which would be difficult to enforce). Size of bubbles will also be an important factor, with smaller bubbles being lower risk. There are many variables that would need to be considered to establish design principles.

31. A safe approach to bubbles would need to include isolation of all members of a bubble in the case of one member showing symptoms. This would lead to increased frequency of isolation for people, particularly in the winter months.

32. There are also equity considerations in the design of bubbles. Additional factors would need to be considered around vulnerable people, healthcare workers, and other groups who may be affected differently. The approach needs to consider the effects on households of different sizes, including those in HMOs. Introducing bubbles may affect people in different cultural groups differently, for these reasons and others.

33. Further work is required to fully understand the potential impact of bubbles, which has not been possible to do in the timeframe or with the parameters given. Until a detailed approach is developed, it will not be possible to assess the level of risk with any degree of confidence.

34. The conclusion is that introduction of bubbles is not straightforward and carries potential unforeseen risks. SAGE can undertake more work on this and would advise understanding this more to inform any decision.

Actions:

- SPI-M and SPI-B to work together to further consider principles for safe bubble design, to be based on further input from CO

Infection transmission in protests

35. Public assembly, including protest, is currently restricted by the COVID-19 regulations. As part of the longer-term release of measures, restriction of public assembly will need to be reconsidered.

36. It is not expected that protest or social disorder will automatically follow from an easing of restrictions. Nor is it expected that any resistance to new measures will emerge which reflect patterns of protests in other countries, because such events appear to be specific.

37. SAGE agreed that as steps are taken to ease the lockdown, each step needs to be accompanied by very clear communication of the continued public health justification for any remaining restrictions. Tracking of emerging patterns of public support, non-adherence and potential social disorder may be useful.

38. It was noted that a useful addition to control measures SAGE considers (in addition to scientific uncertainty) would be the feasibility of monitoring/enforcement.

List of actions