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EDITORIALS

Shielding from covid-19 should be stratified by risk

Lockdown is damaging lives; stratified shielding could help get us out

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Protecting those at most risk of dying from covid-19 while relaxing the strictures on others provides a way forward in the SARS-CoV-2 epidemic, given the virus is unlikely to disappear in the foreseeable future.[1] Such targeted approaches would, however, require a shift away from the notion that we are all seriously threatened by the disease, which has led to levels of personal fear being strikingly mismatched to objective risk of death.[2] Instead, the aim should be to communicate realistic levels of risk as they apply to different groups, not to reassure or frighten but to allow informed personal decisions in a setting of necessary uncertainty.

Several preprints have modelled "stratify and shield" strategies based on enhanced protection of the vulnerable while easing or removing constraints on others.[3-8] They all aim at identifying groups that are at high risk of dying from covid-19 and are therefore shielded against risk of infection. The models have different views on how such shielding can be ended, however. Some have considered ending shielding when herd immunity levels are reached in the unshielded population.[3] The theory is that disease in the unshielded—who should experience low rates of severe morbidity and mortality—will not overload critical care. If stratified shielding is combined with attempts to damp down spread among the unshielded,[5] then social distancing may be needed until a vaccine is developed. Other strategies suggest a third group, the shielders, who either are considered immune because of prior infection[4] or are repeatedly tested for SARS-CoV-2 infection.[6]

Clear criteria

Stratification requires the ability to identify those in the population at high risk of dying from covid-19. Clearly in some institutions, such as care homes and hospitals, some form of universal shielding will be necessary. Risk stratification in the general population should be based on information that is generally known to people and communicated in a manner that can be easily understood. Covid-19 mortality closely parallels risk of death from all causes for age and sex,[9] with age being by far the most powerful stratification variable: covid-19 mortality in people aged over 90 has been above 1.5% during the epidemic, more than 10 000 times the level seen in those under 15. One model considered initiating shielding at age thresholds ranging from 45 to 75.[8] This (somewhat implausible) lockdown for all adults in middle age or above is projected to produce the largest reduction in mortality, but it could herald a second major wave of deaths after relaxation; a threshold of 65 is considered optimal. Other models tend to select shielding from age 70, a threshold floated by the UK government in mid-March but miscommunicated through a well publicised series of apparent about turns.[10]

These models will soon be informed by better empirical data from forthcoming large surveys of seroprevalence and the prevalence of current infections. Age and sex alone are unlikely to be sufficiently discriminatory for stratified shielding.[3] A starting point would be to add ethnicity, simple comorbidity categories (including cardiometabolic and renal disease), obesity,[11] prescription medication use (as indicators of morbidity), and postcode (for measures of socioeconomic position, urbanicity, and current local information on SARS-CoV-2). A risk score for "getting infected and then dying from the infection" could be constructed from these factors, based, for example, on the findings on predictors of covid-19 mortality reported by the OpenSAFELY study[11] and supplemented by evidence on local risk of infection. For communication purposes, this could be split into an updatable "chance of getting infected" score based on current local infection levels and a "risk of dying if infected" score, which will depend on personal risk factors. People could be assigned to one of five categories—for example, from very low to very high risk. Appropriate guidance would be provided for each category, but individuals could opt for a lower or higher category depending on their risk appetite, since legal enforcement would be neither beneficial nor practicable.

Practicalities

Challenges going forward include how acceptable stratified shielding would be to the public, how shielding would work in practice, and the pros and cons of formally including a third "shielders" strata. Overcoming them will require input from many scientific disciplines, including those investigating optimal

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communication of risk and uncertainty,[12] and recognition that notions of chance are already deeply ingrained in public understandings of disease aetiology.[13]

Stratified shielding will need to be combined with other measures and should be recognised as a population health strategy.[14] It is not dependent on the (unobtainable) goal of accurately predicting individual risk. The ability to clearly distinguish groups at different levels of risk is sufficient.[15] Similarly, concerns that some recovered people may not attain even temporary immunity—which are probably exaggerated[16 17]—should not prevent adequately informed members of this group from providing shielding. It is impossible to abolish individual risk from life completely, and this approach could substantially reduce the harm to the population.

Lockdown is seriously damaging many aspects of people's lives, harming most those with the least resources. As constant vigilance will be required over the coming months and perhaps years, serious consideration should be given to implementing locally informed and implemented strategies to stratify shielding according to risk.

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