

Table 1. Survey Answers by Role

Question	Role					P Value
	All (N=294)	Physician (N=68)	Advanced Practitioner (N=83)	Nurse (N=119)	Other (N=24)	
Content with the N95 reuse conservation strategy, no. (%)	72 (25)	24 (33)	22 (31)	23 (32)	3 (4)	.04
Comfortable reusing an N95, no. (%)	84 (47)	23 (27)	22 (26)	36 (43)	3 (4)	.07
Frequency of user seal check, no. (%)						.27
Always/almost always	154 (57)	13 (33)	10 (26)	12 (31)	4 (10)	
Sometimes/Half the time	39 (14)	28 (18)	45 (29)	68 (44)	13 (8)	
Never/Don't know what a seal check is	77 (29)	23 (30)	17 (22)	2 (42)	5 (6)	
N95 donnings/shift on an average clinical workday, no. (%)	294					.10
1–2	71 (24)	15 (21)	26 (37)	26 (37)	4 (6)	
3–5	193 (66)	50 (26)	44 (23)	82 (43)	17 (9)	
>5	30 (10)	3 (10)	13 (43)	11 (37)	3 (10)	
Longest hours N95 worn on an average clinical workday, no. (%)						.02
≤1 h	107 (36)	29 (27)	42 (39)	33 (31)	3 (3)	
>1–5 h	109 (37)	26 (24)	24 (22)	46 (42)	13 (12)	
>5 h	78 (27)	13 (17)	17 (22)	40 (51)	8 (10)	
N95 replacements needed in 1 week at the peak of COVID-19, no. (%)						<.01
Never	71 (27)	26 (36)	23 (32)	21 (29)	1 (1)	
1–2 times	94 (36)	19 (20)	26 (28)	42 (45)	7 (7)	
3–4 times	32 (12)	1 (3)	7 (22)	17 (53)	7 (22)	
>5	27 (10)	6 (22)	5 (18)	12 (44)	4 (15)	
Does not recall	34 (13)	5 (15)	5 (44)	16 (47)	5 (15)	
Longest number of working days that HCW reused same N95, no. (%)						<.01
1–3 d	30 (12)	0	4 (13)	20 (67)	6 (20)	
4–7 d	59 (23)	6 (10)	20 (34)	26 (44)	7 (12)	
8–14 d	51 (20)	14 (27)	10 (20)	21 (41)	6 (12)	
>14 d	117 (45)	37 (32)	35 (30)	41 (35)	4 (3)	

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Can we pursue a “herd immunity” policy?

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To the Editor—The coronavirus disease 2019 (COVID-19) pandemic is worsening—even becoming an uncontrollable situation in many countries. Thus, some people believe that it is impossible

to completely control this epidemic, so they tend to support “herd immunity,” which allows severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) to spread freely through the population.¹ However, such an approach will not return things to normal after the difficulties caused by this pandemic. On the contrary, following a herd immunity approach will lead to more serious outcomes. Although some reports have recommended against a herd immunity approach, the effects of herd immunity still need to be

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discussed. The disadvantages and possible consequences of herd immunity can be summarized as follows.

- (1) Almost everyone is susceptible to COVID-19, and young people are not invincible. The World Health Organization found that the proportion of people aged 15–24 years who are infected increased 3-fold from February 24 to July 12, 2020.² Also, some famous and strong athletes have tested positive for SARS-CoV-2.
- (2) Reports of second and even third infections have emerged in many countries,³ which indicates that herd immunity by natural infection is ineffective. However, the mechanism leading to more severe reinfection is less clear. This may be caused by high dose of virus, more virulent virus, antibody-dependent enhancement or IgG levels and neutralizing antibodies decline.^{3,4}
- (3) Currently, research on drugs and vaccines for COVID-19 is proceeding rapidly.⁵ However, an uncontrolled transmission policy will lead to a decrease in the number of healthy workers engaged in drug and vaccine research, development, production, and vaccination. Therefore, this policy will lead to greater challenges. On the one hand, the number of patients will increase dramatically, and on the other hand, the production of drugs and vaccines will decline.
- (4) Notably, we cannot achieve herd immunity without the help of vaccines. For example, growing numbers of travelers and children who had not been vaccinated created a measles outbreak, and herd immunity disappeared in 2019.⁶
- (5) Published studies have suggested that COVID-19 can result in other diseases such as diabetes, brain inflammation, and neurological dysfunction.^{7,8} If billions of people test positive, the viral damage to their other organs and sequelae after treatment must be considered.
- (6) Herd immunity by natural infection bring healthcare systems to paralysis and collapse on an unprecedented scale; eventually, the mortality rate would increase, as in the early stage of the epidemic.⁹ At the same time, a rapid influx in COVID-19 patients will strain medical resources, such as medical staffs, equipment, and drugs, for the treatment of other diseases. In addition, some hospitals will close other departments to prevent nosocomial infections, which will prevent patients with other diseases from receiving timely medical treatment.
- (7) Ending the lockdown will not save the economy. As the first country pursuing herd immunity, Sweden is now suffering the worst economic crisis since World War II. Its gross domestic product has fallen 8.6%, more sharply than those of its neighbors, despite the no-lockdown policy. Meanwhile, Sweden unfortunately became the first country in northern Europe to have 100,000 confirmed cases, and Sweden has seen the twelfth highest death rate worldwide.¹⁰
- (8) The immune gap between people in countries that pursue herd immunity and people in other countries will broaden. Large-scale transmission will follow the resumption of international travel.

Currently, the success of some countries, such as New Zealand, Japan, and China, in fighting the spread of the pandemic has fully proven that robust public health approaches are effective and that only after the epidemic is contained can the economic situation be truly improved. At the same time, we must be clear that oscillating between “herd immunity” and robust scientific approaches will result in more serious consequences. Not only will the national economy be harmed, more people will be infected and mortality rates will be higher. Therefore, before specific drugs or effective vaccines are developed, both individuals and countries should firmly pursue the strategies of suppressing and controlling transmission. These strategies are the best choices in this severe epidemic situation, even though such measures may seem unbearable in the short run.

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