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## Why Payments Are Better than Lotteries to Induce Vaccinations

Suppose that Marty is offered a choice between incentives for a COVID-19 vaccination:

- A lottery ticket that would pay \$1 million dollars if the number is picked.
- A \$20 bill for certain.

If Marty has a one in 100,000 chance of winning the lottery, the expected pay-out is \$10. Even if Marty likes to gamble, the \$20 certainty exceeds the “expected value” (in statistical terms) of the lottery pay-out. This is a well-known result from “risk theory”. Similar arguments explain why people are willing to pay relatively small (certain) premiums to avoid low probability but high cost adverse outcomes due to property theft, illness, or death.

As we approach the end of July 2021, local, state, and federal officials have watched with dismay how the vaccination rate has hovered well below anyone’s most generous estimate for achieving herd immunity. Michigan’s [vaccination rate](#) of 48.6% fully vaccinated is below the national rate of 49.6%, and well below (generous) estimates of 70% or thereabouts necessary to reach some sort of herd immunity.

Simple math suggests that if \$20 is the right offer, one could achieve another 50,000 vaccinations for the \$1,000,000 offered (in Michigan’s lottery), and 250,000 vaccinations for \$5,000,000. This blog has established several times since the beginning of COVID-19 that because the disease is a negative externality (one’s COVID-19 infection adversely affects others) subsidies are essential to get to the “right amount” of vaccination. Markets alone won’t cut it.

Moreover, if one values a statistical life at \$5,000,000 (the midpoint of most estimates), if 250,000 vaccinations save more than one statistical life, the marginal benefits exceed the marginal costs. This is a criterion for beneficial economic investment.

Economists have long established that handing out cash (which can be spent any way the consumer wishes) is the cheapest way to help people. Some object that the consumers may spend it on the wrong things (liquor, cigarettes, or drugs), and that simply handing out \$20 bills incentivizes the “hander-outers” to help themselves to a few of them. All of these objectives are valid, but what about the objective of eliminating COVID-19?

The COVID-19 virus, and especially the new Delta variety, doesn’t care about bureaucratic niceties as it kills people. Why should those who are fighting the virus worry too much about such niceties, as they try to combat it?

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