

Opinion

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How to get more coronavirus testing at lower cost



Your Turn

Dr. Manoj Jain and Dr. Bill Frist
Guest columnists

A common question asked is, “How can we keep our workforce and school children safe as we reopen in the midst of a pandemic?”

As doctors and health policy experts, we offer an innovative approach that can facilitate mass testing of our workforce and our school children at regular intervals.

It’s a testing technique called “pooling.” Used in other diseases such as HIV and tuberculosis for screening, this approach can reduce the number of tests put through the machine and the cost by five-fold and still maintain the validity of the test.

In Metro Nashville, more than 42,000 tests have been administered, and in Shelby County, more than 48,000 tests have been done to date. These have been conducted on those with

symptoms, however, when we do tests for screening, largely those who do not have symptoms, we can pool the samples.

Pooling increases the capacity so that thousands of tests could be processed in a matter of days instead of weeks.

Here’s how pooling works

COVID-19 testing involves a polymerase chain reaction (PCR) test which is very sensitive and picks up even the smallest of viral RNA particles on the swab. In effect, this allows us to pool samples from 100 persons into 10 batches, and if a batch is positive then we can test the samples individually – identifying the person(s) infected.

Some of the laboratory directors are piloting the pooling technique, which has been validated for COVID-19 testing in a research setting, to see if we can scale up to five-fold in test capacity. Also, the cost of the test which is in the range of \$100 per test can be lowered to \$20.

We envision a scenario where employees and students are regularly test-

ed. Imagine workers at a restaurant or a grocery store beginning their work every week with a self-administered nasal swab, which the employer batches and sends for COVID-19 testing.

Within 24 hours the results alert both if there is a current infection. If the result is negative nothing needs to be done, but if positive then the worker is quarantined and the employer works with the public health department to identify recent contacts, thus averting an outbreak.

We must begin large scale testing

To date, our testing efforts have primarily been focused on those with symptoms, those who have been in contact with a confirmed case of COVID-19, and our essential workers.

But as we reopen and our testing capacity expands, we must begin largescale, regular testing of workers, and students.

We’ve found that a great deal of infection is spreading when one is asymptomatic, having no sign of illness, or presymptomatic, in the few days before the start of the illness. In fact, as many

as 80% of COVID-19 cases may have mild or no symptoms.

An infected individual may feel well at work or school, but can still be transmitting the virus to co-workers or classmates.

Though we can never make a workplace or a classroom 100% safe, we can reduce risk and future spread significantly by aggressive testing and pooling. And pooling is an effective technique when the positivity rate in the asymptomatic population, the general workforce, and school children, is low (less than 1 percent), which is the case in most cities.

If our cases increase exponentially, then implementing mass testing with this innovative and proven pooling methodology is our best hope to prevent a repeat lockdown and keep our workforce and children safe.

“The New Normal: Living in the COVID-19 Era” is a series of articles by Dr. Manoj Jain, an infectious disease and health policy expert, and Dr. Bill Frist, former U.S. Senator and heart-lung transplant surgeon. They help us understand and adjust to the new normal of COVID-19.

More testing will allow us to safely reopen nation



Your Turn

Dr. Ming Wang
Guest columnist

Our nation is polarized.

Some people want to completely reopen the country to save our jobs and the economy.

Others do not want to reopen because a few dozen infected Americans in early March has led to more than 1.7 million people confirmed being infected and more than 91,000 deaths.

They worry about what would happen if we reopen when millions more could be infected.

But is there a way to reopen our nation safely?

The answer is yes.

We should conduct voluntary nationwide testing so that those of us who are not infected can safely return to work, while those who are infected can stay home to recover or get treatment.

We must radically increase testing

On Wednesday, the Centers for Disease Control and Prevention reported 12.9 million tests, of which 13% were positive.

That mean only 4% of Americans have been tested so far, so we really don’t know how many millions more have contracted COVID-19.

The only way to find out is through a national testing. Fighting a pandemic without testing is like fighting a boxing match with our eyes closed.

The COVID Tracking Project reports that the United States has tested an average of 200,000 people per day since March 8.

However, we need to perform 10 million tests per day. We are only at one-fiftieth of that target right now.

But is such high-speed testing even feasible?

Wuhan, China, is planning to test all its 11 million citizens in 10 days.

If a single city can do that, our country should be able to test 10 million a day.

We must come together

National testing clearly offers the safest approach to reopening our nation, so why aren’t we doing it?

That is because our nation is so gridlocked right now with both sides being preoccupied by criticizing each other that the merit of the issue itself has unfortunately been largely ignored. The answer is right in front of us but we can’t see it, like a blind spot.

To truly see the issue, we have to overcome our polarization and find common ground. We need to listen, to see from each other’s perspective, and to aspire to the higher goal of putting our nation’s best interest ahead of our own.

Finding common ground right now will not only help us discover a solution (i.e., national testing), but will also, and even more importantly, inspire all of us to change and become more willing to work together.

We can do it. We are Americans, and we thrive on innovating and overcoming obstacles! We can conduct the neces-

sary testing if we set our minds to it.

Will people choose to get tested if it is voluntary? Yes, as has been proven by the annual flu shot, and like the flu shot, we need to make the testing accessible and convenient.

Speaking of tests, this issue is really a test of our national character. Combating this virus has somehow further polarized us, so it is up to us now to show that when everything is on the line we can in fact work together and find common ground, and that is this: we all care about human lives, and we all care about our jobs and the economy. So let’s do both, namely, reopen, and at the same time, expeditiously test.

If we do this, we will be able to show that we as Americans can indeed overcome our differences and come together as a nation at a most critical time, making this our generation’s finest hour.

Dr. Ming Wang, M.D., Ph.D., is a co-founder of the Common Ground Network and can be reached at drwang@wangvisioninstitute.com, www.drmingwang.com.

LETTERS TO THE EDITOR

School closings by design

There is a lot of frustration and anger in our city about Metro schools closing some neighborhood schools that have long been parts of our community.

It is important for people to realize that school closings are the heart of the market-based “school choice” education reform that Tennessee has been pursuing for years. The whole concept behind these so-called reforms is that schools will compete for limited funds, that “bad” schools will lose and be closed, and “good” schools will win and have gain more funds, with “bad” and “good” being defined by test scores and enrollment.

Rarely will “reformers” advocate for major increases in funding for public schools, because keeping money limited and requiring schools to compete for it is an essential aspect of their model. Across the country, the school choice model has failed to produce large scale

improvements for students, yet our state continues to push this agenda. If you dislike school closures and the disruption and pain they cause communities and families, you should not support a school choice/competition based model of education, because these school closings are the means by which the market reform system is intended to work.

If we continue this approach, our city will see more and more school closings in the future.

Anne-Marie Farmer, Nashville 37204

School closings save money

Much has been written and discussed about taking funds from Nashville Metro Public Schools for tuition to private schools for some under-privileged students attending some of the failing public schools.

In dispute is the \$38 million education savings account in the state budget.

One thing that should be considered in the discussion is the value that private schools contribute directly to the Metro school budget.

1. Cost of money that Metro public schools save because some of its citizens volunteer to create other schools for various reasons that are subject to many public-school requirements.

2. The number of students in Metro private schools are approximately 15,000 in over 30 private schools.

3. The number of new public schools that would be required to accept these students is substantial; maybe 10 or 15.

4. Maintenance of buildings and grounds are occurring costs.

5. The number of extra teachers required for these students, say 30 per classroom, would be about 500.

6. Purchasing land and construction for one school varies greatly from \$40 to \$90 million times 10/15.

7. Average teacher salary in Metro is \$57,000 times 500 = over \$28 million.

Now if for some catastrophic reason private schools decided to close, in these times of uncertainty nothing is predictable, how would public schools survive. Enormous tax increase?

Don Forte, Nashville 37221

Smooth sailing

Kudos to everyone involved in Metro’s free mask program held last Saturday at the Metro Complex on Murfreesboro Road.

The drive-through was well planned and easy. The people handing out the masks were quick in what they were doing, while giving everyone a smile and a friendly greeting.

My total time from entering the Complex until exiting back onto Murfreesboro Road: Five minutes.

Thanks, guys!

Jim Nance, Nashville 37211

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