A White Paper on Additional Strategies to Fight Covid-19 in Madison County
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GENERAL INTRODUCTION: Covid-19 is a very serious disease, especially if you are elderly or have a chronic medical condition. It is precisely because it is so serious that we all need to come together and take a new look at what we can do to combat it. By their own admission, local government and the health department realize that we are making little progress.

Of necessity we were forced to fly by the seat of our pants for the first weeks and months of this pandemic because so little was known about the virus, but now we have a much better understanding and some actual scientific data on which to base our strategies. Covid-19 rapidly devolved into a political issue instead of a medical one and people have taken sides based on little more than emotions, political affiliation, and who is making the suggestions. It's difficult for politicians to entertain other ideas when they have been preaching that their way is the best way for so long, but this is the natural evolution of events in medicine. Medicine doesn't approach many diseases the same way it did when I was a resident. In fact, one of the first things I remember about med school was being told that "half of what we are teaching you is wrong. The only problem is, we don't know which half." We are only now beginning to get an idea of what works against Covid-19 and what doesn't. We all have the same goal, to rid ourselves of this menace as quickly as possible. Can we lay down the political swords and all come to the table and see where the evidence leads us?

MASKS: The hot topic is masks and the wearing of masks is probably one of the most polarizing issues. Whether one wears a mask or not seems to make more of a political statement than a medical one. There have been 9 anecdotal reports concerning masks – none of which are conclusive or have been subjected to peer review. There is however one peer-reviewed controlled study specifically dealing with mask usage during Covid-19. It comes from Denmark – the Danmask-19 study – in which 3000 people were recruited to take part. 1500 were given 50 surgical masks, instructed to wear them all the time, and change them every 8 hours. The other 1500 did not wear masks. At the end of the study, 1.8% of the mask-wearers and 2.1% of the non-mask-wearers contracted the disease, a statistically insignificant difference. Before you conclude that .3% difference is important, let me remind you that if you toss a coin 100 times, it is very unlikely that you will get a 50-50 split each time, yet no one would dispute that the odds remain 50-50, even if most of your tosses resulted in 48-52 one way or the other. It is the same with medical data. Additionally, when the researchers controlled for proper mask usage, which resulted in 46% of the mask-wearers doing exactly as told, the infection rate actually rose to 2.0%, again statistically insignificant. Why is this important? Since this study shows that masks are ineffective in slowing transmission of the disease in the general population, those at high risk may be lulled into a false sense of security and think that even though they are 85 years old with heart disease and COPD, if they just wear a mask, they will be protected.

An additional mask study comes from the Spanish Flu epidemic of 1918 and was conducted by the California Department of Public Health. From October 25, 1918 through November 27, 1918, the citizens of Stockton, California, were required to wear masks and were compared against the population of Boston, MA, who were not. The number of deaths in Stockton per 100,000 was 178; the death rate in

Boston per 100,000 was 163, not statistically significant. This led the California Department of Health to write: *The wearing of proper masks in a proper manner should be made compulsory in hospitals and for all who are directly exposed to infection. It should be made compulsory for barbers, dentists, etc. The evidence before the committee as to the beneficial results consequent upon the enforced wearing of masks by the entire population at all times was contradictory, and it has not encouraged the committee to suggest the general adoption of the practice. Persons who desire to wear masks, however, in their own interests, should be instructed as to how to make and wear proper masks, and encouraged to do so.*

Masks have never been a mainstay of public health and have never even been suggested in flu season although it too is a respiratory virus, very contagious, and spread in much the same way as Covid-19. At the beginning of this pandemic we were grabbing at straws and trying everything to see what might work. Voluntary masks should be encouraged. However let's be careful not to lull the most vulnerable in our society into a false sense of security and make them feel that they are justified and protected in taking undue risks.

SOCIAL DISTANCING: Everyone agrees that no one should cough or sneeze on one's neighbor but we also need to realize that there is nothing sacrosanct about the 6-foot rule. It is an arbitrary designation. Common sense should rule the day.

HAND SANITIZERS: This is probably the most under-stressed yet most important ways to fight this virus. If we all carried a small bottle of hand sanitizer around with us and used it frequently, it would greatly cut down on the transmission. Experts now agree that in all likelihood, the most important mode of transmission is direct contact from surfaces and the subsequent touching of one's mouth, nose, eyes, etc.

CONTACT TRACING: Contact tracing sounds good in theory but in practice it rarely works. The medical journal Lancet states that it is effective only if "less than 1% of transmissions occur before the onset of symptoms." In other words, if there is a 1% incidence of Covid-19 transmission occurring before the onset of symptoms, then contact tracing becomes ineffective. By the time these people are diagnosed and asked for contacts, those contacts are already infecting others. Additionally, according to scientists at Oxford University, "the coronavirus spreads by too many mechanisms to be contained by named contact tracing."

There are practical difficulties too. The National Governors Association estimates it would take $3.6 billion to hire 100,000 contact tracers. If these were even distributed evenly throughout the nation, Tennessee would receive 2000 and based on population, Madison County would receive approximately 28. Oxford researchers also go on to say that the average contacts of each diagnosed case total 36, that means contacting 36 individuals for every person diagnosed. On one particular day in late November, the number of new positive tests in Madison County totaled 63. That means, if local contact tracing were to be done successfully, it would require 2331 separate interactions for that day alone.

Additionally, the CDC considers contacts to be people you come in contact with in public transportation, in a shelter or prison, a school, at work, at a social event, at church, or in any healthcare facility including a clinic or a hospital.

There are better, more effective ways to use this money and these personnel that will be discussed at the end of this paper.

RISK: Persons 85 years of age and older are at highest risk of death from COVID-19. 80% of deaths occur in persons 65 years and older. The typical patient who succumbs to the virus also has an average of 2.6 co-morbidities (other health problems that render them more susceptible). That means that they are obese (the number one factor), have heart disease, cancer, diabetes, lung disease, or other chronic problems, not only to Covid-19, but to a host of other acute illnesses.

The survival rates for Covid-19 by age according to the CDC are:

0-19	99.97%
20-49	99.98%
50-69	99.5%
70+	94.96%

Covid-19 is more serious than annual flu. The IFR (infection fatality rate) according to the CDC for flu is 0.1%; for Covid-19 it is estimated to be about 1.5%. This however is known to vary with the number of asymptomatic carriers and the actual number of people tested. South Korea, who underwent a massive public testing campaign, has an IFR of 0.6%.

80% or more who test positive have no symptoms or only mild symptoms resembling a cold. It is widely believed that many people are asymptomatic and are never tested and therefore aren't counted.

VACCINE: Two companies are racing to get vaccines on the market: Pfizer and Moderna. Both are mRNA vaccine and both are similar, but there are important differences. The Pfizer vaccine must be maintained at *minus* 92 degrees Fahrenheit from manufacture to delivery; the Moderna only requires *minus* 20 degrees storage. Each claims an efficacy (success rate) of between 90 and 94.5%. This is surprising since the mumps vaccine that has been around since 1948 still only achieves 78% after one injection and 88% after two. Unlike DNA and protein vaccines which are the norm, this is the first mRNA vaccine ever approved for human use. The mechanisms are beyond the scope of this paper but suffice it to say the concern by virologists is that we don't have any idea of the mid-term or long-term negative effects (if any). From the political standpoint, do we really think that the day after a significant population is injected, that life will return to normal? It is estimated that it may take up to a year before the success of the vaccine can be adequately assessed in the general population. There are a lot of unknowns and it will be up to each individual to study the research and recommendations and decide if this vaccine is appropriate for him or her.

SO WHAT SHOULD WE DO? Based on scientific data to date, here are our recommendations:

The only controlled study investigating the efficacy of masks shows mandatory usage in the general population to be ineffective. This agrees with the California Department of Public Health conclusion during the Spanish Flu pandemic of 1918. We also agree that there is no issue with voluntary masking. The concern that arises when government claims that masks are the answer is that the most vulnerable among us may be lulled into a false sense of security and take risks they otherwise might not be inclined to take. Additionally, observation confirms that over the previous eight months of this pandemic, we have seen no decrease but rather an increase in numbers of positive tests in spite of mandatory masking in Madison County.

Social distancing using common sense is not an unwarranted practice so long as we realize that six feet is an arbitrary distance and policies such as one-way traffic in big box stores and alternate seating in restaurants is subjective at best.

Although I'm certain there will be a big push to make the vaccine mandatory, I would encourage everyone to make his or her own decision. There are still a lot of unknowns, not just about this vaccine in particular but about mRNA vaccines in general. Hopefully it will prove to safe and effective.

Concerning contact tracing, I think the case has been made that it is ineffective against Covid-19 because of the multiple forms of transmission and the fact that contagion precedes symptoms by 2-4 days, depending on which authority you read. Add to this the extreme cost in both dollars and manpower and it is a situation that cannot be maintained. There are better ways to use these resources.

OUR SUGGESTION: There are only three ways this pandemic can end: The virus will either mysteriously and miraculously burn itself out, we will achieve natural herd immunity, or artificial herd immunity will be conferred through a viable vaccine. There are no other options. It is doubtful that we will wake up tomorrow and the virus will be gone. Even if the vaccine were available tomorrow, there will of necessity be a process of determining if it worked, what level of immunity was conferred (if any), and the proper course to take next. Herd immunity seems to be the default position and the shortest path to our goal. So how do we get there?

We are by default already on the way. The problem is that, like a fisherman who casts a broad net looking for halibut, we are getting a lot of bycatch in our Covid-19 net. Because our efforts to date have proven ineffective, we are continuing to expose the most vulnerable among us – which we don't want to do, and protecting the heartiest among us on whom we depend to get this virus out of the general population. We are preoccupied with numbers but that is precisely where our focus should NOT be. There is a vast difference between fifty 20-year-olds who test positive and one 85-year-old. They are not equivocal. The overwhelming majority of the younger group will never even know they had it while the elderly among us most probably will have a difficult time. We need a strategy to protect those who need protecting while allowing the least-susceptible among us to go about their lives.

We should have – and still can since the pandemic obviously seems to be continuing to spread in spite of government's and the health department's best efforts – concentrated our efforts on the vulnerable.

Instead of making hundreds if not thousands of phone calls a day in an attempt to "contact trace," we should use that money and personnel to contact those at highest risk. There should have been and still should be a meeting of physicians from every clinic in Madison County to enlist their support. Instead of funding people to "contact trace," each clinic, depending upon its size and patient volume, could be assigned help. These should actually become "clinic employees" so that they would be allowed to legally contact these high-risk patients without violating HIPAA privacy laws. They could easily be identified by CPT diagnosis codes in each office. These people could then be given specifically-tailored instructions depending upon their diagnoses and told of the risks of returning to the general population. The social services arm of government could then periodically check on these patients to ensure they have proper PPE, groceries (if they are alone or have no real support system), needed medicines encouragement and personal contact (if only by phone). We could not require them to stay out of the general population but if we provided the necessary instruction, encouragement, and made sure their basic needs were covered and that they weren't alone, I think in many, if not most cases it could be accomplished.

The next step would be to open society back up. As contrary to political correctness as this sounds but equally sound medically, we need the healthiest among us to develop immunity so that the rest of us will be safe. It's going to happen anyway. The only difference is we are now protecting the vulnerable among us. What the health department continually calls "new cases" is in reality only "new positive tests." Most people who present for testing aren't sick; they are just curious or concerned. Our policy has been as if we were dealing with 1971's "boy in the bubble" in reverse. Instead of taking this severely immune-compromised boy – the vulnerable among us – we have tried to isolate the rest of society so that he can run free. When government talks about "flattening the curve," they aren't talking about reducing the number of cases; they are only talking about spreading them out over time. This only prolongs the misery. Protect the vulnerable. In 40 years of practice I have never once had a patient request a flu test because he was around a friend of a friend who had it, yet we are testing everybody who walks in the door, whether they are sick or not, and acting like they are critically ill. I would venture to say that if we tested every asymptomatic person for flu we would get a large number of "new cases" also.

If we had made progress over the past 8 months I would be happier than anyone. This has stressed our clinic to the breaking point. My staff is on the front lines 16 hours a day, 7 days a week, potentially exposing themselves to the virus day in and day out. To suggest, as Mayor Conger did, that somehow, we are in this for monetary gain is both childish and insulting. We want this to end. Einstein said that insanity is doing the same thing over and over again and expecting a different result. We all need to sit down at the table and explore any potential avenue that might provide real results. Are these our only options? Of course not. Are these the best options? Maybe not, but unless we all come to the table and together look at what we can objectively do, we'll never know.

Ronald Reagan asked, "Are you better off now than you were four years ago?" I would ask, are we better off now than we were six months ago? This isn't a political game; lives are at stake. The proof is in the pudding. If current strategies worked things would, by definition, be getting better. They aren't.

It's time to consider other options.