Interview with Dr. Malgorzata Gasperowicz: “We have to aim for global eradication!”

Part one of a two-part series

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Part two can be accessed here.

Dr. Malgorzata (Gosia) Gasperowicz is a developmental biologist and a researcher at the Faculty of Nursing at the University of Calgary. She earned her Master’s at the Intercollegiate Faculty of Biotechnology in Gdansk, Poland, and a Ph.D. in biology at Albert Ludvig University of Freiburg, Germany. Dr. Gasperowicz is a co-founder of ZeroCOVIDCanada, a member of COVIDisAirborne, and a member of the World Health Network (WHN). Since the pandemic's beginning, she has been analyzing the dynamics of SARS-CoV-2 spread and communicating this scientific understanding to the public via social and traditional media. She also advocates for better pandemic response policies.

Benjamin Mateus (BM): Dr. Gasperowicz, thank you for taking the time to sit for this interview. Your contribution to our recent Science Webinar on the COVID-19 pandemic was very valuable in providing a scientific explanation of the need to eradicate the coronavirus. How are things now in Alberta with the surge? And could you perhaps, for those unfamiliar with your work, begin by telling us how and why you initiated Zero COVID in Canada, and why you are advocating for eradication?

Malgorzata Gasperowicz (MG): Yes, of course. Thank you for allowing me to participate.

Well, the situation in Alberta is also horrible, like in the US. The number of cases has been climbing rapidly since July. We are currently in the fourth wave of the pandemic.

I’m in the Protect Our Province Alberta group. It’s a grassroots movement—there are doctors, scientists, engineers, educators, actors, activists and concerned citizens in the group—that started with street protests because our public officials announced that they would stop testing, tracing and isolating. Two weeks straight, we held rallies every day. We have also been engaged in making public announcements to tell the public what is happening and what we need to do because our health officials aren’t. But they didn’t do anything. They just watched the numbers grow exponentially. And now our ICUs are full again. The group recently decided that we had to push harder, calling for action. That’s where we are now.

[New cases of COVID-19 in Alberta, Canada, had rapidly declined from the peaks in early May,when daily new COVID cases had reached 2,000 per day, down to less than 30 a day in mid-July. Despite this progress, on July 1, 2021, the province prematurely reopened and also decided, later on, to stop mass testing and isolation requirements. Since then, cases have skyrocketed,with deaths beginning to escalate and the health care sector pushed to overcapacity.]

As to how I started advocating for Zero COVID, I’m one of the co-founding members, but it was a sort of amalgamation of people. It began at first with me and three other women chatting on Twitter, having private conversations on what was happening last summer. We discussed how the cases were growing and growing, but nobody was doing anything about it. We knew that it had to be stopped, that the chains of transmissions had to be contained; otherwise, it would grow exponentially. This thing wouldn’t just stop by itself.

I was following Professor Yaneer Bar-Yam at the time, and there were others too, and we all met on Twitter. A person in this group, who has remained anonymous, was also in *EndCoronavirus* and was very active in connecting people through social media by commenting on chats and spreading the idea of how to end the pandemic. She was able to communicate with different professors, epidemiologists and infectious disease specialists, educating them on why “zero” was so important, why elimination was so important and how to achieve it through “green-zone” or “bubble” strategies.

[EndCoronavirus is an international volunteer coalition and networking hub that aims to “develop and promote community-based solutions for policymakers, businesses,and individuals.” The organization was founded on February 29, 2020, by Professor Bar-Yam, president of the New England Complex Systems Institute based out of Boston, Massachusetts. Bar-Yam specializes in the quantitative analysis of pandemics.]

After the summer, during the second wave, many people began to think similarly about the possibility of ending the pandemic. Out of this amalgamation grew momentum. We started writing letters to policymakers and tried having talks with them on these issues.

On April 2, 2021, we published an open letter directed at Prime Minister Justin Trudeau, the Minister of Health Patty Hajdu, Dr. Theresa Tam, the Chief Public Health Officer of Canada, and provincial and territorial leaders, explaining the dangers of the third wave and failures of the current mitigation strategies. We wrote that we could either aim to eliminate the virus or risk igniting a wildfire all over again, which is what is happening.

BM: In listening to you, I can’t help but sense that the pandemic concerns you deeply. How did you first become engaged with it? What were your first memories of it?

MG: It was sometime after mid-February 2020. I was preparing to go to a scientific conference in Italy scheduled for the second week of March. And of course, on February 20, the outbreaks started in Bergamo and other towns in Italy. I knew right then that I couldn’t go because it was a growing disaster there. That was when the pandemic became real to me. I started paying close attention to where it was spreading, really watching the [epidemiological] curves. First in Italy and then in France and recognizing that it would soon be coming to Canada.

I immediately started bombarding politicians with letters warning them that it was coming, and we were on this trajectory with *exactly* the same steep growth as in Italy and France. The only difference was that we were just several weeks behind them. What was happening there was going to

happen here. I sent those letters to many member of our provincial legislative assembly and all the city councilors in Calgary.

BM: Is your field of study also in epidemiology?

MG: No, no. I am a developmental biologist. I wasn't trained in epidemiology. But analyzing the spread of COVID-19 is very similar to the data I would investigate in the experiments I conduct. Whether it would be the weight of embryos and placentas in mice, or the number of cells growing on a Petri dish, or the number of COVID-19 cases in a particular region, the analysis and approach are similar. The common thing is that it has the time component, which allows me to see the dynamics of the growth or decline. And I use the same tools I used in my Master's study in biotechnology. My thesis was on the kinetics of enzymes.

BM: I would like to read a quote from President Biden's speech before asking my question. He said, "A distinct minority of Americans and elected officials are keeping us from turning the corner. These pandemic politics are making people sick, causing unvaccinated people to die. We cannot allow these actions to stand in the way of protecting the large majority of Americans who have done their part and want to get back to life as normal." How would you respond to this statement, and can we, as he implies, vaccinate our way out of this pandemic?

MG: No, it's not possible. Delta is twice more transmissible than the original variant. And we don't have a sterilizing vaccine [*which is the ability for the vaccine to generate an immune response to stop a pathogen, including viruses, from replicating within someone's body. The smallpox vaccination provides sterilizing immunity, as an example*]. The vaccines are also not 100 percent efficient against transmission, which means even if we vaccinated 100 percent of the population, we would continue to see community transmission with this highly transmissible strain.

Let's assume, and this is a close approximation, that the vaccine is 60 percent efficient against transmission. If we wanted to stop the spread of the virus, reduce its reproductive growth number to less than one and reach the herd immunity threshold, we would need to vaccinate 140 percent of the population, which is mathematically not possible. In other words, to get back to normalcy using a vaccination-only strategy is impossible if, at the same time, society operates as if we were still in 2018, where everything is completely open.

In such a strategy, the coronavirus would still spread very fast while it mutates. If the virus didn't mutate, we might get away with it by giving ourselves booster shots. But because it mutates, evolves and gets better and better at what it does, we are dealing with an impossible situation if we rely only on vaccines.

By letting it spread among vaccinated people, we are applying evolutionary pressures on the virus to learn to evade immunity established by vaccination. And as it becomes better at evading immunity, the vaccines that we are currently using will become inefficient even in protecting us from severe outcomes.

BM: The terms elimination, eradication, and mitigation are well-defined terms in public health. Can you define these so that the readers understand how these terms apply to the present discussion?

MG: Elimination is stopping community transmission in a particular geographical area. This means driving locally derived cases to zero. Though it can still be imported from somewhere else, it isn't actively transmitting in a region. As a strategy, elimination means decision-makers propose policies to stop all community transmission, and if cases are imported, these are stamped out quickly to drive numbers back down to zero.

Eradication is when we eliminate the given pathogen or biological organism everywhere on the planet, except for, perhaps, in scientific laboratories used for their study. But it is not present in any population on Earth.

And then, there is mitigation, which attempts to place temporary public health measures and different controls to slow down the spread. It is essentially a reactive strategy used to prevent overwhelming healthcare systems.

BM: Would China be a country that is employing elimination as a strategy?

MG: Yes, China would be such an example. Atlantic Canada as well. New Zealand and some of the Australian states. But now, there are regions in Australia under intense pressure to adopt mitigation strategies that are driving numbers up. [*Cases in Australia have been climbing exponentially throughout much of July and August, climbing to seven-day averages of 1,700 cases per day, primarily caused by the Delta variant.*]

Essentially every western country is using mitigation as a strategy to *contain* the virus. This means the policymakers are *allowing* the virus to spread until they strain the healthcare system's capacity, forcing them to reduce the number of cases, and hospitalizations, and ICU admissions. But it is only then that these stronger measures are taken. And as soon as numbers go down, they open again, lifting all restrictions, and the virus begins to spread once more, overwhelming hospitals again.

I remember watching in horror after the first wave in my province in Alberta when cases were down to just ten per day. The government decided to relax all restrictions and reopen. If we had persisted for just one month with the same measures in place, we could have driven cases down to "zero," we could have stopped all community transmission. But they decided to reopen, and I knew cases would start growing again. And it did begin to grow almost immediately, but slowly at first. And then we had the massive second wave after schools reopened and people came back from the summer holidays.

Early on, when the outbreaks were just taking place across Europe, I was trying to explain to people why the concept of "zero" was so important, but I think I failed in this. In the beginning, I thought they didn't have the correct information and were taking the matter too lightly. And I thought the policymakers, as individual people, needed accurate information. So, I wrote them emails and sent them letters explaining the math behind it, hoping they would read it, understand the dangers. I wanted them to realize that we needed to control travel, impose mandatory quarantines for travelers from everywhere—from Italy, from Europe, and not just from Wuhan, China—and that could have possibly prevented the start of the pandemic here.

Once the World Health Organization (WHO) declared the pandemic, the decision-makers began implementing emergency measures. It was almost a magic word—pandemic. It began to work immediately, bending the curve down, including the number of severe cases. Then I thought, "They will solve it. We will figure out this pandemic." But then, in May, just before the reopening, they started to say, "We have to learn to live with the virus." And this scared me…[Pause]

I am trying to think about how I want to express my thoughts. World War II came to my mind as I was speaking. I am from Poland, and my grandmother lived during the war. She would tell me stories of the German occupation.

So, it's like you have an enemy army invading your country. But your government tells you, "Sorry, but we have to learn to live with it. They will kill some people, maybe not everybody, at the same time. If it's just gradual, then it's okay."

That was my immediate association when I heard we had to live with it. It was giving up. This virus is an enemy, and they were essentially saying that if it killed some people without overwhelming the hospitals, it's okay. That is a horrible message.

BM: That is a great comparison and one that I think is very appropriate. Given that we have seen these recurring patterns of response in Canada, the US, and across Europe, what does that tell you about capitalist society and the people running the governments?

MG: Well, it's very saddening. It's something that I would have

preferred never to have learned about society. It is a terrifying realization that we live in something that is very dysfunctional and uncaring. I thought that the West had done its homework. But it hadn't, and it is horrific.

For instance, after the first devastating wave that killed so many, the message was that it was okay because it was mainly the old who were dying. That was terrible. The message was "that we don't care about these people, we don't need them."

This sentiment has been very present in Europe for the last 20 years. From time to time, you would read headlines that we have this demographic disaster in Europe; Our society is aging; What will we do with the costly pension plans and such? They were making a case that an aging society is a real social problem. And then came the virus that magically solved their dilemma.

Instead of respecting the elderly and protecting them, we have let the virus kill them. If the virus were killing those in their 20s to 40s, we might have seen the pandemic over in weeks. It would have been treated seriously. But because it was killing the elderly, nobody reacted fast or took it seriously. Even now, the virus kills more elderly than any other age group.

Also, there was an excellent graph from a report done in Ontario – it was from many months ago—I will send it to you—but they looked at the income distribution for COVID cases. Specifically, how many infections occurred based on income range by household. The highest group was earning more than $150,000 per year. The infection rate in this group was minimal, while the infection rate in the group earning less than $30,000 per year was five or six times higher if I remember correctly.

Another study showed that more people from low socioeconomic status were getting infected, being admitted into hospitals and dying compared to privileged groups.

Yet, those earning more than $150,000 per year are the ones making the decisions to fight the pandemic. And these decision-makers who happen to be living in Zero COVID bubbles are telling the rest of us that Zero COVID is impossible, that we have to learn to live with the consequences of the disease. They don't realize how privileged they are, that their reality is entirely different from the reality of most people. They are completely detached from these problems.

Telling someone earning more than $300,000 per year to learn to live with the virus is very different from telling someone earning less than $30,000 every year. For instance, a single mother who must work some precarious job, maybe even two jobs to make ends meet, is completely immersed in the pandemic, while the privileged who are sheltered by their wealth can live without the threat posed by the virus.

To be continued