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Our first speaker will be Professor Antoine Flahault, the Director of the Global Health Institute in Geneva. He is also the Director of the Swiss School of Public Health in Zurich. Let me say that, sadly – and somehow ironically – two of our six panelists today are stuck with Covid in Geneva. They are Professor Flahault and Els Torreele. Two out of six of us have Covid as we speak and that can be a strong reminder to all of us that the pandemic is not over.

Antoine, the floor is yours.

Antoine Flahault

Over the past year, two significant events have unfolded in relation to the COVID-19 pandemic. The first occurred on December 7th, when China opted to deviate from its zero-COVID strategy. This decision is estimated to have resulted in an excess death toll of 1.4 million between December 22 and February 23 alone, contrasting with the less than 90,000 deaths officially reported by authorities during that period. The second pivotal moment transpired on May 5th, 2023, when the Director-General of the World Health Organization (WHO) declared the end of the Public Health Emergency of International Concern (PHEIC) associated with COVID-19. Simultaneously, a call for continued vigilance was issued due to the persistent "risk of new variants". Meanwhile, a plethora of new sub-variants of Omicron emerged, primarily derived from the XBB sub-variant, all highly transmissible but without triggering an uncontrolled surge in hospitalizations.

As of the beginning of November 2023, while approximately 7 million deaths have been officially reported to the WHO, estimates suggest that 27 million excess deaths [18;33] have occurred since the onset of the pandemic. These figures should be complemented by projections of 20 million additional lives saved through vaccines, as calculated within the first year of their deployment. Furthermore, the extent to which Non-Pharmaceutical Interventions (NPIs) implemented during the early stages of the pandemic (e.g., lockdowns, remote work, border control, mask mandates, contact tracing, etc.) have saved lives remains unknown.

Post the termination of the PHEIC, COVID-19 has not been eradicated globally, leading to recurrent waves in various seasons worldwide, resulting in new cases, hospitalizations, and excess mortality. Notably, Canada reported more COVID-19-related hospitalizations in 2023 than in the entire year of 2020.

Despite signals indicating the continued intense circulation of SARS-CoV-2 after the WHO declared the end of the PHEIC, many governments globally hastily disarmed their surveillance tools. Two valuable lessons should be heeded in this regard. Firstly, the UK's Office for National Statistics developed a Rolls-Royce instrument involving repeated random sampling of the entire population, enabling precise and reliable estimates of COVID-19 prevalence. This approach also yielded important figures on case-fatality and case-hospitalization ratios, overcoming biases present in other series produced without representative samples. Secondly, pioneers such as France and the Netherlands implemented wastewater surveillance, proving to be a useful, cost-effective, and sustainable method for maintaining reliable epidemiological surveillance of SARS-CoV-2 circulation and early detection of emerging variants.

A significant legacy of this pandemic is an enhanced understanding of the SARS-CoV-2 transmission route. COVID-19 is an airborne disease, primarily transmitted in crowded, poorly ventilated indoor spaces. Microdroplets carrying the virus linger ("aerosolized") in indoor air for minutes or hours, posing a risk before settling on surfaces. While hand transmission is theoretically possible, most transmission can be prevented by appropriately fitted face masks, preferably FFP2 or N95, and maintaining good indoor air quality through adequate ventilation. These findings empower individuals to adopt behaviors that reduce risks, such as wearing masks and maintaining distance indoors, or preferring outdoor gatherings. Additionally, they guide building maintenance authorities in ensuring proper ventilation, air filtration, and continuous CO2 monitoring as proxies for air quality. Despite the recognized importance of improving indoor air quality against COVID-19 and other respiratory diseases, investments in better-ventilated buildings remain scarce in many countries.

The understanding of long COVID remains limited and underestimated almost four years into the pandemic. Over 50 long-term effects of COVID-19 affecting various organs have been identified. Approximately 10% of infected individuals develop persistent symptoms occuring 12 weeks after their acute initial infection, irrespective of its severity. Despite causing persistent disabilities, negatively impacting quality of life, and imposing a substantial economic burden, there is insufficient investments in research and development for effective treatments.

Throughout the pandemic, anti-science movements, political populism, and misinformation proliferated, resulting in loss of life or harm to health. Populist-leaning counties in the USA, who voted for Trump in 2020, lagged behind those who voted for Biden, in terms of COVID-19 vaccine coverage, with mortality rates following a similar pattern. Similar trends were observed in voters from populist parties in France and Germany. The Kiel Report of May 2022 emphasized that public information campaigns were the most effective determinant among public policies for combating the pandemic, surpassing school closures, testing policies, contact tracing, international travel controls, and other measures.

In conclusion, it becomes apparent that while they may excel in crisis management, our policymakers seem less adept at proactive prevention. The pandemic has been a tragic event, claiming 27 million lives worldwide, and we likely averted even greater figures through NPIs and the rapid deployment of vaccines in the initial years. However, it appears that the lessons learned from this tragedy were inadequately learned. We abandoned preventive measures too hastily, neglected effective surveillance tools, and insufficiently invested in measures that

could substantially alleviate the burden of respiratory viral diseases, regardless of the strain or its variants. The 20th-century generation arguably performed better, drawing lessons from waterborne diseases like cholera and dysentery and championing water sanitation as a standard for development. In contrast, we have opted to 'live with' the circulation of SARS-CoV-2, accepting its persistent burden, numerous unknowns, and the ongoing risk of new, potentially more transmissible and virulent variants. This vacuum has allowed anti-science movements and political parties espousing populism to flourish, with their misinformation estimated to have cost the lives of as many as 300,000 American citizens. It is imperative that scientists and evidence-based policies take precedence to safeguard lives and better prepare the world for an impending new pandemic.