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Taylor Brandon

# CREATING AN EVIDENCE ENGINE TO DRIVE IMPACT: LESSONS LEARNED FROM PROVIDING REAL- TIME ANALYSIS FOR COVID-19 GLOBAL RESPONSE

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## Case Study

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LAUNCH & SCALE  
SPEEDOMETER

Duke

GLOBAL HEALTH  
Innovation Center



## ABOUT US

The Launch and Scale Speedometer, led by the Duke Global Health Innovation Center, seeks to understand key factors for successful and fast launch and scale of global health interventions to help save lives.

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## Lessons Learned from Providing Real-Time Analysis for COVID-19 Global Response



In response to the COVID-19 pandemic, unprecedented public and private investments and collaborations accelerated the research, development, manufacturing, and distribution of new interventions, especially safe and effective vaccines. Our team at the Duke Global Health Innovation Center was already working to investigate and document pathways and timelines to market and scale for health innovations across the world. Through this initiative, the team had been tracking milestones and timelines of the development and eventual spread of innovations, including medicines, vaccines, diagnostics, and devices, targeting infectious diseases, maternal, newborn, and child health, and other areas of global health.

In the summer of 2020, as early orders for vaccines under development were being reported publicly, our Launch and Scale Speedometer team started looking for data sources tracking both the development and the global spread (through manufacturing, regulatory approval, and purchases) of COVID-19 vaccines in order to analyze the evolving vaccine marketplace and implications for global access and equity. However, the available data was fragmented and difficult to find. Despite the advance market commitments for hundreds of millions of COVID-19 vaccines from countries around the world, it was difficult to assess how many vaccine doses were projected to be manufactured over the coming months or how much of the projected stock had already been purchased and by whom.

To address this evidence gap, we undertook a new effort to track, aggregate, and analyze publicly available data on COVID-19 vaccine purchases. Our team published the findings and initial analysis in November 2020, which garnered significant interest from media channels, governments, market advisors, and advocacy groups.

The data at that point showed significant disparities in vaccine purchases by country income, with the wealthiest countries accounting for nearly all of the advance market commitments. At that time, when manufacturing capacity was a major constraint, this indicated that initial supply may be directed to high-income countries to fulfill those initial orders, leaving out middle- and low-income countries as well as the global vaccine consortium COVAX. This is, in fact, how things played out and the purchase disparities persisted over time, even after manufacturing capacity was able to match demand (by late 2021).

The research project grew organically in response to the highly dynamic situation and continued demand for evidence and insights from multiple stakeholders globally. Beginning with tracking of advance market commitments (purchases made before the product is fully developed or on the market) of COVID-19 vaccines, we added tracking of regulatory approvals as those started to be announced in late 2020. In March 2021, the team released data on vaccine manufacturing, including manufacturing sites and projections by vaccine.

Figure 1: COVID-19 vaccine purchases by population coverage in December 2020 (left) and December 2021 (right)

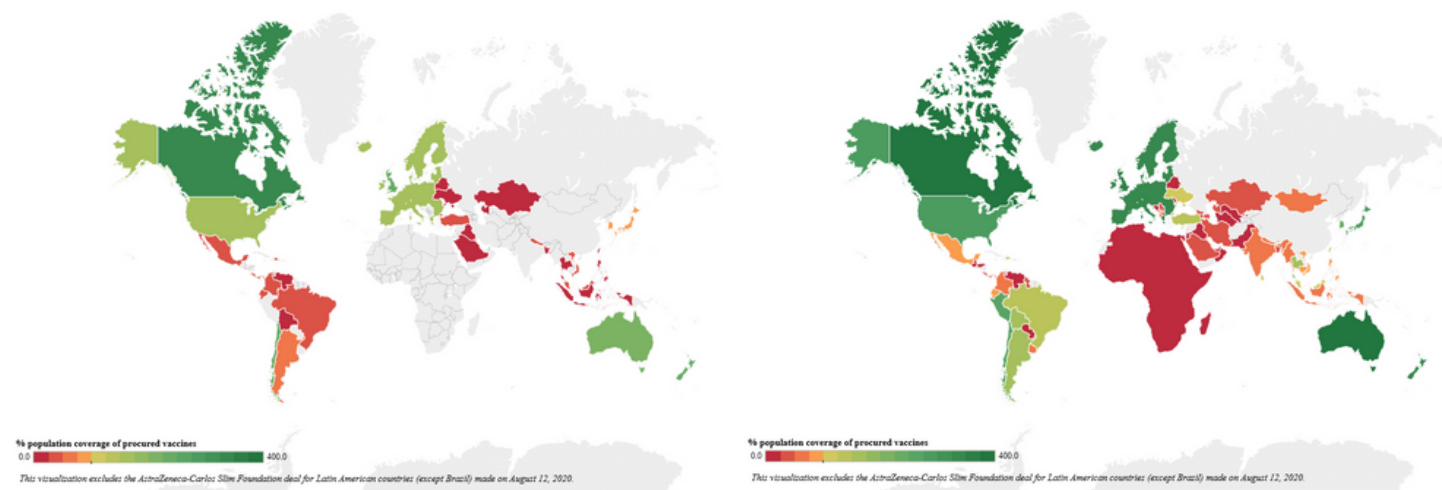
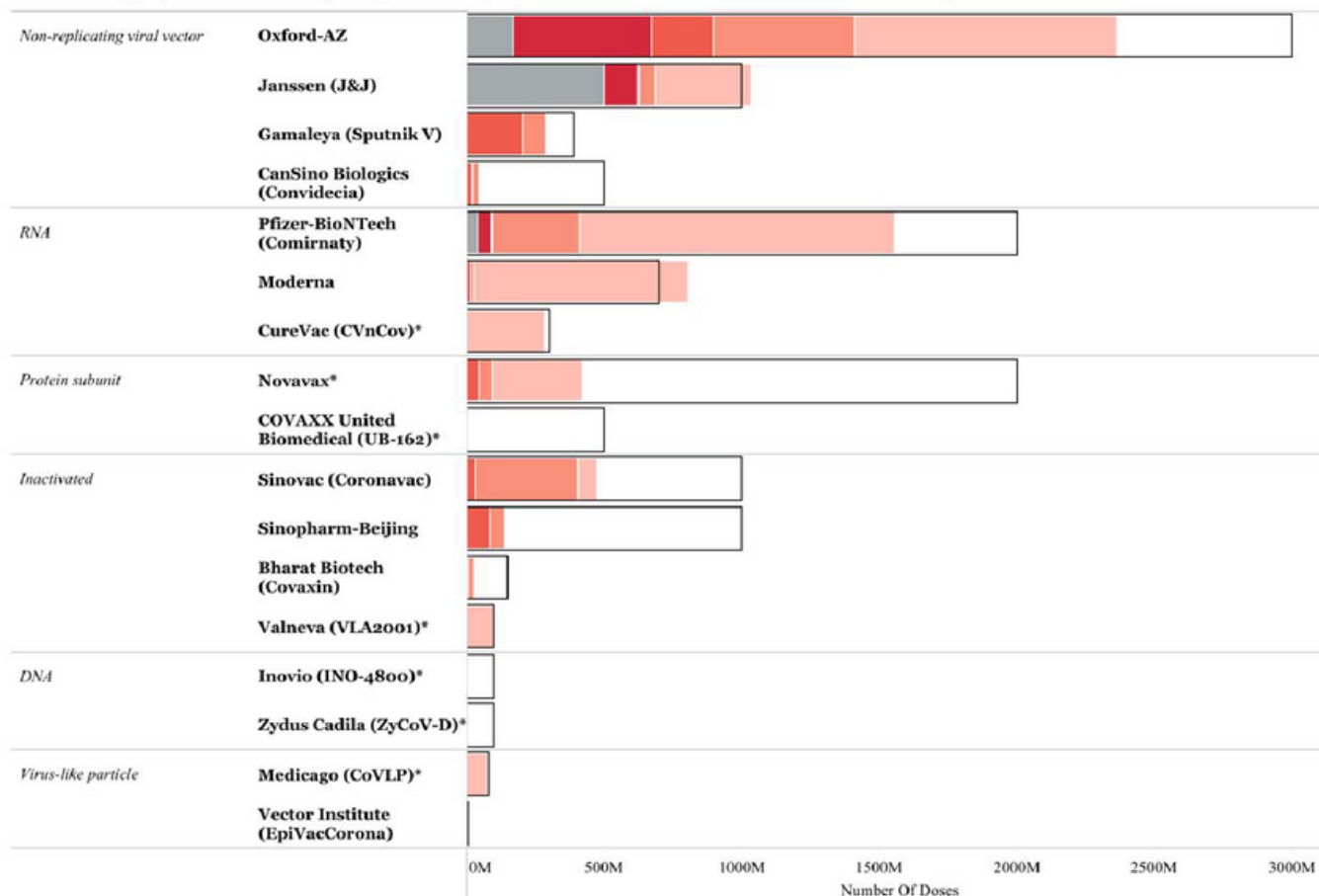


Figure 2: Early manufacturing projections for 2021 and total purchases by country income level (projections and purchase data from March 18, 2021)

Manufacturing projections are for 2021, while purchases may include 2022 deliveries. Vaccines with an asterisk are not yet on the market.



Country Income Level Classification

Global entity/COVAX

Low income

Lower middle income

Upper middle income

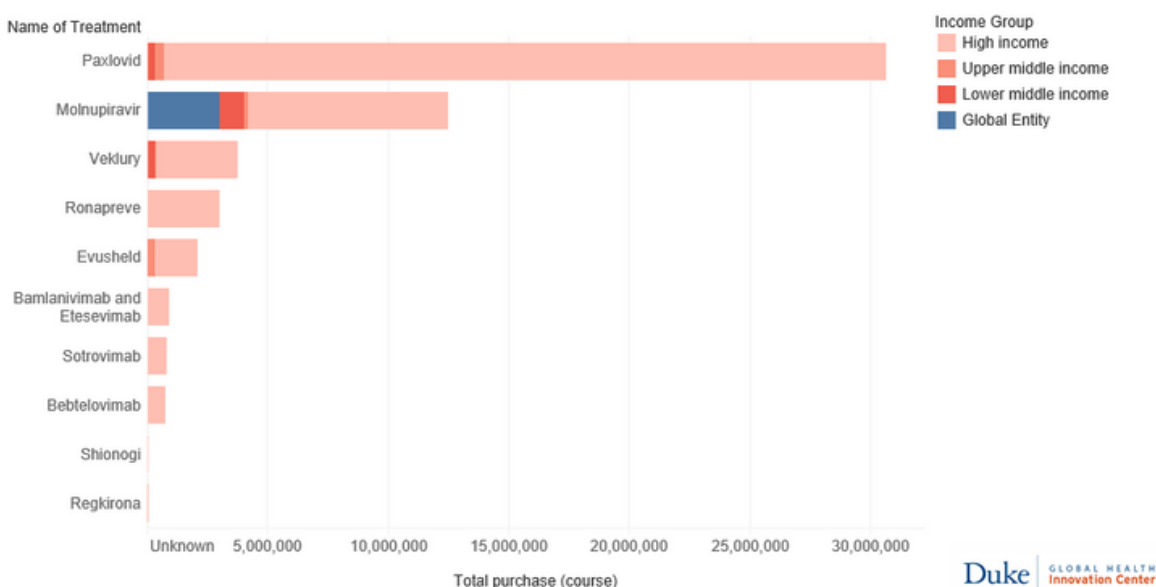
High income

Data updated on March 18th 2021

When it became clear that wealthy countries were going to control the vast majority of vaccine supply for at least the first year, we started tracking vaccine donations, including pledges and fulfillment of those pledges. As COVID-19 oral therapeutics hit the market in 2022, the team added data on therapeutic purchases.

Our team updated the data weekly through August 2022, with both interactive visuals and data sets made available for public use.

Figure 3: Purchases of COVID-19 therapeutics, by product and country income category



## LESSONS AND INSIGHTS

Reflecting on the project's development and impact, we identified six key lessons and insights that can help to guide other efforts to translate data and evidence to insights that inform policy and advocacy on critical issues. These include:

- 1 Unlock real-time data and insights
- 2 Commit to transparency and crowdsource solutions
- 3 Embed communications capabilities from the beginning

- 4 Make time to respond to media interest
- 5 Harness the value of academia
- 6 Engage complementary partners to amplify impact



## 1 UNLOCK REAL-TIME DATA AND INSIGHTS

We initially made the decision to publicly share the data after encouragement from the Launch and Scale Speedometer advisory board. Presenting our initial efforts to this group of global health experts was a great way to pressure test the work and help us identify gaps in our methodology, as well as the potential value of the findings. The advisory board members believed that the visualizations, showing significant disparities in vaccine purchases by country income and region, were critical evidence emphasizing the need for immediate action to address vaccine inequities. The board pushed us to get the data out, noting the need for real-time, regularly updated data on the COVID-19 vaccine landscape.

We made the decision to share ongoing analysis and data updates on the project website, rather than publish point-in-time findings in a journal, that would soon be out of date. On the surface, it is perhaps an unusual choice for an academic center to publish analysis through blog posts and downloadable data sets. This decision, however, was grounded in our commitment to translating the data into useful insights; the key priority for the team was for the analysis and data to be seen and used in real-time. Policy decisions about purchases, funding for global distribution efforts, and donations were being made rapidly, while inequities were growing. We believed that provision of the data as it changed was imperative to supporting evidence-based policy.

This decision was important for several reasons. It meant that we could leverage interactive data visualizations, allowing users to filter for the information most relevant to their interests and also allowing us to show change over time in a dynamic landscape. We were able to use weekly blog posts to contextualize key issues driving vaccine equity, providing an evidence-based perspective on hot topics such as COVAX supply challenges, intellectual property waivers, and booster doses. This kept our data and analysis relevant and top of mind for journalists, policy makers, and advocates.

## 2 COMMIT TO TRANSPARENCY AND CROWDSOURCE SOLUTIONS

We created systematic data searching strategies to identify news articles, government announcements, and press releases on vaccine data such as purchases and manufacturing partnerships. Our search scope also had to go beyond conventional news sites and include social media such as Twitter to capture announcements from government officials.

Before diving into the project, we assessed the landscape and identified other organizations that were also collecting and analyzing data related to COVID-19 vaccine distribution. We connected with these teams and, whenever possible, shared our data for cross-checking and discussed methodological challenges. Given the limited and fragmented nature of the publicly available data, it was particularly helpful to triangulate our findings with others when we could.

We knew that we were undoubtedly missing data points and communicated this clearly when we released the data. We framed our project in terms of the overall goals but were also clear about the limitations and asked for help in identifying and correcting any gaps or mistakes in the data. We received emails every week by users of our data who noticed inconsistencies or omissions in the data, allowing us to make the necessary fixes. By making our data and process public, we were able to strengthen the overall product.

Another strategy that helped us overcome gaps was to pull in external experts with stronger domain experience. In the case of this project, we needed to draw on expertise in regulatory pathways, intellectual property law, supply chains, and vaccine manufacturing. Through our networks, we were able to connect with experts who helped us define our variables of interest, structure our data so that it could answer the key questions, and identify what were likely to be the critical issues three to six months down the road.

### 3 EMBED COMMUNICATIONS CAPABILITIES FROM THE BEGINNING

Building in strong communications support proactively helped propel our initial data and analysis and led to sustained impact. We worked with a communications firm to create dissemination strategies, which was a game-changing decision. Through this partnership, experts in health communication helped us to translate our findings for different audiences and to identify which findings were going to be most relevant.

We added a COVID-19 tab to our existing project website to share written analysis and data visualizations, as well as posting the underlying datasets that informed our findings and recommendations but we also needed help to get the word out. The communications firm amplified the value of our work, promoting our initial findings to international media outlets and policy leaders. The initial press release, announcing our first analysis of vaccine purchase data, was picked up by television, print, and radio media around the world. This attention led to further stories within the month featuring our findings in the New York Times, Wall Street Journal, Washington Post, BBC, Guardian, CNN, NBC, and many other outlets.

We built on the initial interest by developing a consistent schedule for data updates and sharing weekly insights with journalists, policy makers, researchers, and others who joined our listserv. In addition to the established weekly update and dissemination strategy, we wrote op-eds and policy briefs that highlighted data-driven recommendations for addressing the growing inequities in vaccine access.

### 4 MAKE TIME TO RESPOND TO MEDIA INTEREST

At the start of our research on COVID-19 vaccine purchases, we did not anticipate the level of media interest or the time that would be required to respond. As it became clear that it would be significant, we committed to being as responsive as possible, setting up internal structures to communicate with each other about the requests coming in and who was able to address each one.

We learned early on that journalists are often working on short turnarounds with tight deadlines. Sometimes we could have a week to set up an interview, other times, only a couple of hours. Having more than one team member who could take interviews helped us respond in a timely way to most requests.

At certain points in the project, two of the team members were each spending between 20 and 30 hours per week responding to media requests with interviews and written answers. While this was an enormous time commitment, it also had great impact in terms of expanding the reach of our work. The more coverage we got, the more interest it drove in our research, leading to more media inquiries but also more credibility. Governments started to contact us to update their data on our website, improving our data collection process and accuracy. Multilateral institutions, policy leaders, and funders contacted us to gain more insight into the landscape as they developed plans for the near and medium term.

Over the past two years, data and insights from this effort have been used by government leaders in the US, Canada, Germany, Peru, and several other countries, as well as the World Health Organization, World Bank, G20, and other multilateral institutions. Making the data freely available also enabled other researchers to publish several peer-reviewed manuscripts citing the data, demonstrating the value of open access.

### 5 HARNESS THE VALUE OF ACADEMIA

Rooted in an academic center within Duke University, our project was seen as an independent and credible source of evidence and insights. Though we partnered with non-academic groups, including advocacy organizations and policy makers, our data collection and analysis remained independent and our findings were sometimes at odds with strongly held positions in the advocacy community. This allowed us to play an important role providing data to shape and inform pandemic response as a non-commercial and objective player, not driven by ideological goals or influenced by funders.

Being nestled within a university also helped us to access experts, as noted above, who strengthened our approach and helped us to contextualize our findings. The convening power of academia was also helpful, meaning that we could bring researchers, policy makers, advocates, pharmaceutical companies, and health system leaders together and facilitate conversations about next steps that were grounded in a shared understanding of the data.

## 6 ENGAGE COMPLEMENTARY PARTNERS TO AMPLIFY IMPACT

Working with partners across the spectrum of players in pandemic response helped us to better understand the data needs and challenges of our target users, as well as get the findings out. On the policy side, we worked with think tanks, government organizations, multilateral institutions, and policy research institutes. On the advocacy side, we worked with global and national-level organizations pushing for more equity in the pandemic response. Our priority with these engagements was to ensure that the actions proposed and taken by each of our partners were based in the best evidence, rather than assumptions or ideological positions. But partnering also had benefits for our project. Through discussions, presentations, and question/answer sessions, we were able to learn more about what kind of data these partners needed and how to provide our findings in formats that were easiest for them to apply and use. We were also able to leverage their networks and communication platforms to share our key findings.

## CONCLUSION

The pandemic provided an unusual context that, in many ways, boosted the impact of the Launch and Scale Speedometer's COVID-19 research. The particularly intense attention on COVID-19 vaccine distribution and equity was unlike anything we had seen recently in global health. Relatedly, the speed with which national and global policy decisions were made and the amount of funding committed by countries, multilateral institutions, and donors toward the pandemic response was unique.

However, the experience of the Duke Global Health Innovation Center's Launch and Scale Speedometer project provides lessons learned of how research can drive evidence-based insights and influence both policy and practice decisions. The lessons we learned through the development of this research and our translation of the findings into actionable insights can be applied to research projects targeting data-driven impact in other areas and other sectors. Prioritizing real-time insights, transparency, strong communication, objectivity, and network partners all help to build and amplify the impact of evidence.



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