Freeman

EPISTEMIX

In-person events: data and forecasting FAQ

With all the virus and variant headlines flooding news feeds, it's no surprise you've got questions about how to move forward with planning and attending in-person events.
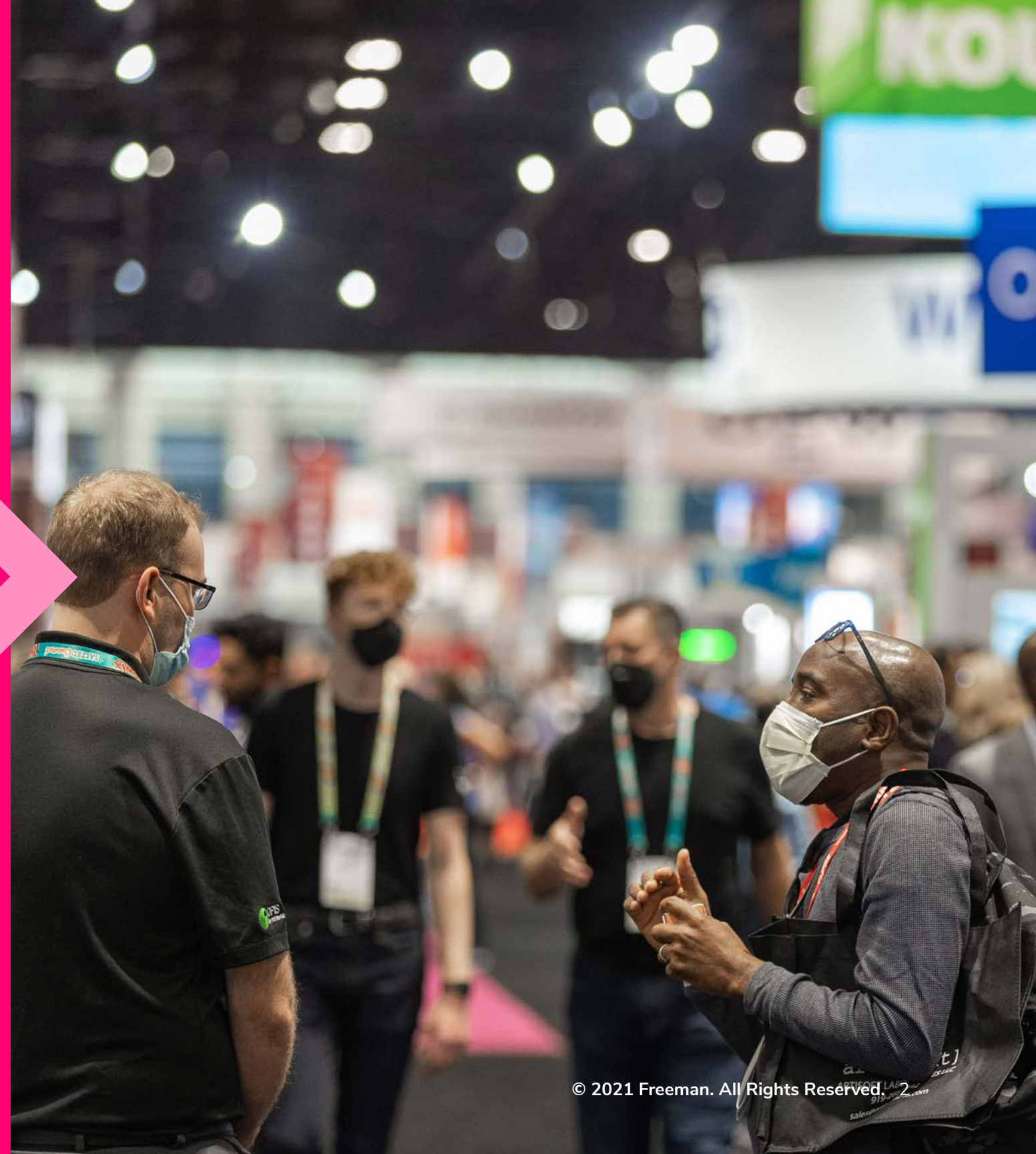
We recently partnered with epidemic data modeling expert Epistemix to provide deeper insights and identify ways to help you get back to business.

Epistemix compiled this list of frequently asked questions to help you navigate the current market as well as provide more background on Epistemix and the work they do.

Freeman

COVID-19
recommendations

What is the CDC guidance for large events?

The CDC recommends following local policies to help prevent the spread of COVID-19.

Specifically, for each location, they recommend considering:

- The current number of cases in the community
- Potential exposure during travel
- The event setting (indoor vs outdoor)
- Duration of the event (5+ days is higher risk)
- Number of attendees
- Attendee behavioral patterns (meeting rooms versus exhibit halls)

All of these considerations are included in our event model and the risk assessment provided to you in the dashboard. Our order form includes the specific information we need from your event to consider the CDC recommendations above.

For more information on the CDC consideration please visit the **CDC guidance for gatherings.**

What is the masking policy in my city?

Masking policies are changing constantly state by state and city by city. Instead of modifying our model to include policies, we calibrate the social distancing/masking compliance in each city to adjust to not only the policy, but the local compliance to the policy.

We also consider all CDC guidelines and provide specific recommendations for mask wearing and social distancing at the time of your event.

What is the CDC guidance for cases at an event?

The **CDC recommends** that areas with higher than 500/100,000 new cases in 28 days are at a high risk. We use this threshold to examine cases at events and estimate that 2 cases/10,000 people per day represents a high risk event.

Does testing have an impact on the number of infections at my event? Do you recommend testing for my event? On-site or pretesting?

By identifying infected people before they enter, testing can decrease the number of active cases that are admitted to an event and reduce the risk of person-to-person transmission. Combining testing with requiring proof of vaccination can limit the number of breakthrough cases that are admitted into an event.

Remember that testing represents a snapshot of infectivity at the time of the test. Individuals can become infected after a negative test. A 72-hour window for proof of a negative test is generally considered acceptable.

What timeframe do you recommend for proof of a negative test? For multi-day events, do you recommend a second test at any point?

The **CDC recommends** proof of a negative test within 1-3 days of registration. There are currently no recommendations for a secondary test. For events longer than 5 days, the risk of an individual becoming both infected and infectious during that time frame increases.
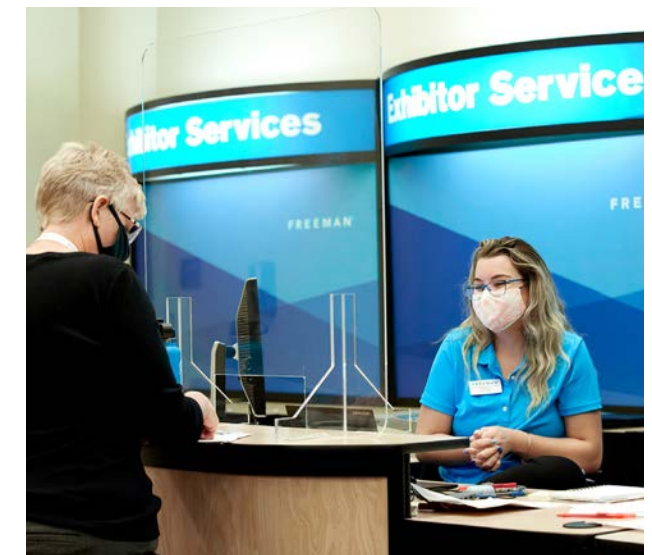
Do you foresee a mask requirement continuing on planes through 2022?

The current **TSA mask requirement** is set to expire on January 18th, 2022. The mask requirement was extended twice in 2021, so it is possible it may be extended.

How can we be proactive about future variants? When will we see another variant?

The **CDC monitors** all variants currently circulating in the United States. The Variants Being Monitored list tracks all variants previously or currently circulating. The Variants of Concern list tracks any variant currently circulating that has shown increased transmissibility or severity compared to the original SARS-CoV-2 virus.

Our team carefully tracks emerging variants and incorporates them into our models and guidance.

Are events a significant cause of increasing cases? Is there a significant difference in cases from events that require proof of vaccination and those that do not?

The impact of an event depends on many factors. Some of the most significant are the case rates in the show location at the time of the event, the number of attendees, and the mitigations that are implemented for attendees, among other factors.

The **CDC recommends** that anyone attending a gathering of any size get vaccinated to reduce transmission of COVID-19. Our models consistently show lower case rates at shows with higher attendee vaccination rates compared to shows with low attendee vaccination rates.

Can you provide insight on winter/spring events (Jan-June 2022)?

Our projections are the most accurate within 2 months out and we are not yet providing general recommendations for 2022 events. Our general recommendations will be released with our Q1 forecast in early December.

What are the behaviors that influence the waves that are seen in the U.S.?

There are many different factors that may influence the waves in the U.S., and globally. Current research suggests that seasonality is a significant component of respiratory illness waves. Other behavioral aspects may be social distancing compliance, increased indoor activity, vaccination and the academic calendar.

4

Freeman

Social distancing, masking, and travel

What happens if policies change in my city, how will that impact the results?

Policies are changing frequently across the country. If a local policy changes after a dashboard has been delivered, you will need to purchase a dashboard update. We will re-run the analysis and provide a new projection for both the city and the event in order to see how the policy change impacts the results.

How will the data change if less people come to my event?

If less people attend an event, we typically expect to see a corresponding decrease in cases transmitted at the event. If there is a significantly different number of attendees expected, we can update the dashboard and provide a new projection for the event.

How do you take into account social distancing?

Social distancing decreases the contact rate between individuals. The contact rate represents the probability of infection from two individuals interacting.

## If we require masks, do we also need to require social distancing?

Since the beginning of the pandemic, we have been gathering data on masking and social distancing. Mask wearing, when enforced and worn properly, is more effective at preventing person-to-person transmission than social distancing. Adding social distancing to mask wearing further reduces the risk of person-to-person transmission.

How effective are masks and social distancing?

Masks result in about a 50% reduction in exposures at an event and social distancing varies from 30-50% based on distance and compliance with social distancing policies.

Do temperature checks make a difference?

CDC considers temperature checks as health checks which detect currently active infections. Temperature checks do not screen out individuals who are infectious but do not have an active fever— this can be up to 40% of all cases.
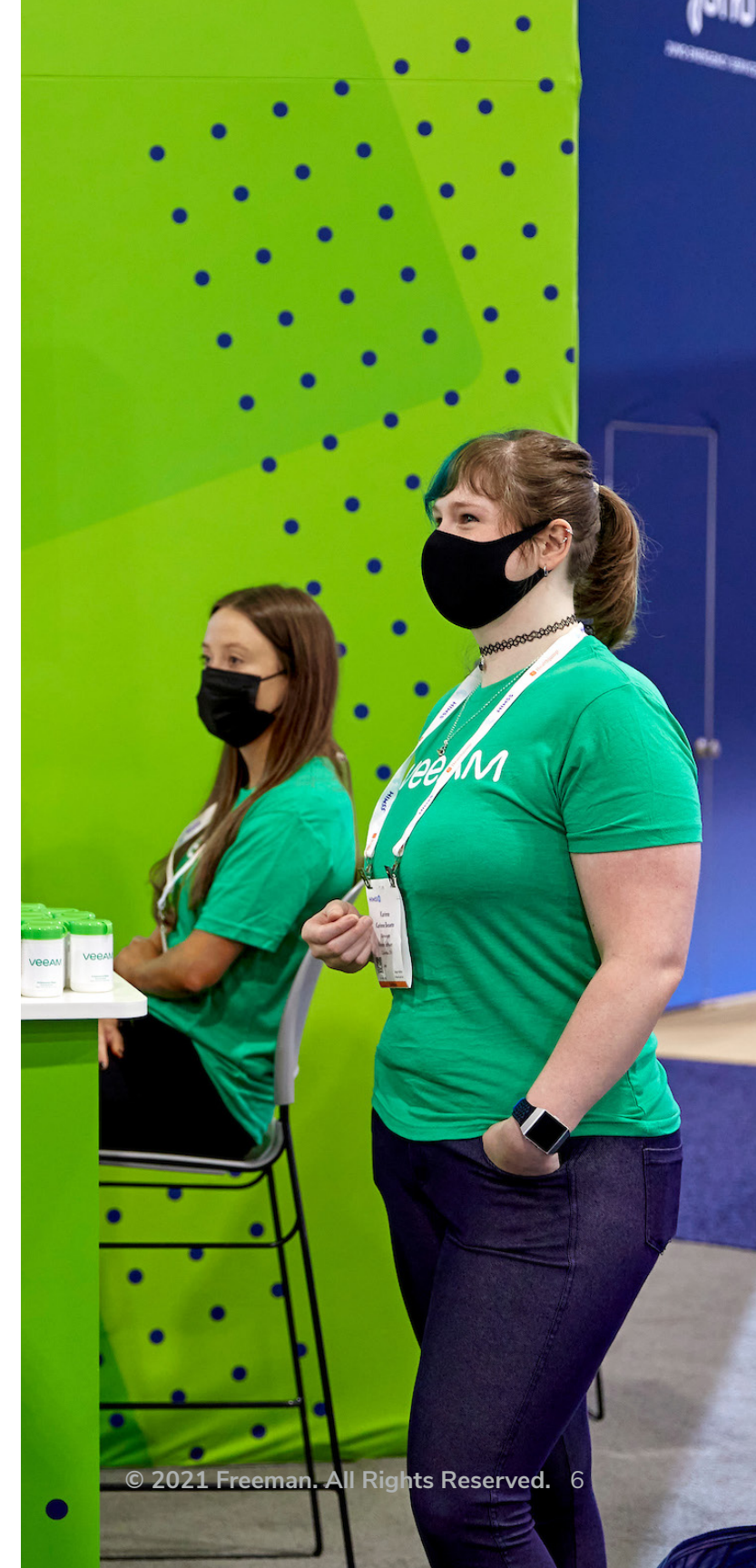
Freeman

Epistemix
COVID-19 model

Are variants included in the model? What about new variants?

All variants, past and present, are included in the model and are present in the population at percentages informed by genomic data studies. New variants are introduced into the model when the variant represents 1% of all new cases.

Does the model include breakthrough infections?

All vaccinated individuals in our model are susceptible to reinfection. The susceptibility is based on how long it has been since the individual was vaccinated (to account for waning immunity) and the effectiveness of vaccines against new variants. In our projections 3-17% of all new cases are breakthrough infections, which is consistent with **CDC predictions.**

Do you take into account a change in death rate with higher vaccinations?

When an individual is vaccinated, we modify their risk of severe infection and death. This changes with waning immunity and new variants.

How do you know what percentage of attendees are likely to be vaccinated?

Surveys across all industries suggest that 80% of attendees and exhibitors attending B2B events are vaccinated, with some specific segments showing even higher vaccination coverage.

How current is the data included in the model?

We calibrate our models with the latest data up to 7 days prior to dashboard delivery.

Are booster shots included in the projections?

We are not yet including booster shots in the model or in the projections. We expect to add booster shots to our model in early October.

Can you predict what percentage of vaccinated event attendees will become infected?

Yes. We keep a historical record for every agent in our model that includes previous infection and vaccination. If a vaccinated individual becomes infected, we retain that data in the model and it can be included in a final report. We are not currently displaying this information on the event dashboards.

Do the models take into account travel from across the U.S.?

In this version of the model, we apply a general import of new infections per day to account for cases generated from traveling individuals. We are currently building a more comprehensive travel model that takes into account infection rates from different locations in the U.S. and different countries.

Event model

Does the model adjust for different types of events? Football games are different from business events, which are different from trade shows.

We model each event individually and consider if the event is indoor or outdoors, whether or not attendees will be in meeting rooms or exhibit halls, and change the movement and contact patterns in the model accordingly. We work with all of our clients to be sure that we are modeling the event appropriately.

Do you offer any sort of endorsement of certification of an event's protocol?

We do not offer a specific certification at this time, however this is in the works. We do provide communication tools for you to share the data and recommendations from our simulations with your attendees and exhibitors.

Does the model consider the risk for people working at events?

The model includes people working at the events. Employees of the event center or specific event staff have the same risk of infection as exhibitors and attendees in the model.

How are cases tracked at events?

If you would like to work with us on a project specific to tracking cases at your event, we recommend sending a survey to your attendees about COVID-19 symptoms and positive tests after the event. This information can be used to track the accuracy of the data provided to you. If you are interested in this service, please contact alex@epistemix.com.

Have you seen attendee and exhibitor numbers decrease based on implementation of vaccine mandates?

Sometimes. This is dependent on your community's demographics, so you will know that best. Surveys across all industries suggest that 80% of attendees and exhibitors attending B2B events are vaccinated. Implementing a vaccine mandate increases confidence in the safety of the event when cases are increasing.

How are Epistemix models verified? How accurate is your COVID-19 model? How has it performed in the past?

Prior to developing the current event dashboard, we tuned our event infection model with events where testing and contact tracing occurred. With comprehensive data collection, our models were able to predict active infections at the event with 95% accuracy.

For new clients, we send out a survey to all of our event customers post-event to collect information on whether or not infections were reported at their event. The survey is optional and based on self reporting from event organizers. All infections may not be reported or become known to event organizers.

Why do your projections look different from other publicly available projections?

There are many factors that determine our model output. Our model is structured based on a robust selection of COVID-19 literature and includes fine-level human contact patterns based on U.S. demography. We fit all our models to the most up-to-date data available. We expect some variation across projections due to different modeling approaches and data sources.

Epistemix Dashboard

When should you run models? (How far in advance of the event?)

We estimate that the optimal time to run a model is approximately two months before your event. On one hand, you need to have enough time after the delivery of your dashboard to act on any decisions you make as a result of the information it provides. On the other hand, the further a model runs into the future, the more uncertain (and therefore less informative) the results are. Two months provides a sensible balance between actionability and reliability.

We can run your model multiple times, with updates. We recommend running an initial model 6 months in advance, and running updates at 4 months, 2 months, and 1 month leading up to the event.

How often does the dashboard update?

Our standard dashboard product includes a set of simulation model outputs generated specifically for your event, informed by up-to-date epidemic data for the city the event is hosted in at the time the dashboard is delivered. To arrange to have the model re-run closer to your event to update the dashboard with the latest epidemic data, please contact Epistemix sales.

Do we have a limit on how many people can access the dashboard at a single time?

We do not enforce a limit on the number of people accessing a dashboard at a single time. We are also not aware of any practical reasons that a very large number of people could not connect simultaneously. In the unlikely event that anyone on your team does experience performance problems, please report the problem to Epistemix sales.

What does the prediction interval mean?

The charts in the dashboards include prediction intervals. These are the shaded regions around the curve on line charts, and the 'whiskers' around the boxes on box plots. Prediction intervals represent the uncertainty about a particular value—e.g. the number of new cases in the community on a particular day, or the total number of cases at an event.

Prediction intervals are calculated by running multiple simulations for each scenario and finding (i) the median value across all simulations, and (ii) the range of values around the median that 90% of simulations fall into. The wider the prediction interval for a given value, the more variability in simulation outputs there were for that value.

Can you supply event organizers with something that we can share with our attendees and exhibitors?

Our dashboards include a "Communications" tab with information about our work and guidance interpreting and effectively communicating the model results shown in the dashboard. We encourage event organizers to share this information with attendees and exhibitors.

Is the dashboard customizable?

We offer a standard event dashboard for a set price. The dashboard is able to be customized under a separate contract with Epistemix.

How are you assisting show organizers that may have client organizations with strong opinions against mask or vaccine mandates?

We provide our show organizers with tools to communicate our modeling results to a wide variety of clients. While these are aimed to communicate to the general public, we work closely with marketing and communications teams to tailor the messaging to be specific to your attendee base.

Wondering how to use these models for your own event?

Learn more about Epistemix and how they can help you today.

E P I S T E M I X