# Confident Travel Initiative

## *SAFE and TRIP*

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# The Boeing SAFE Model

## What is the model's purpose?

- Analyze the effectiveness of various screening & quarantine protocols that lower COVID-19 prevalence in travelers

## How does the model work?

- Compares testing, quarantine, and hybrid testing/quarantine scenarios
- Considers the disease timeline for COVID-19 and the efficacy of RT-PCR and rapid antigen tests

## How can the model be used?

- Aid policy decisions on passenger screening, testing, and quarantines

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## Test & Screening Strategies

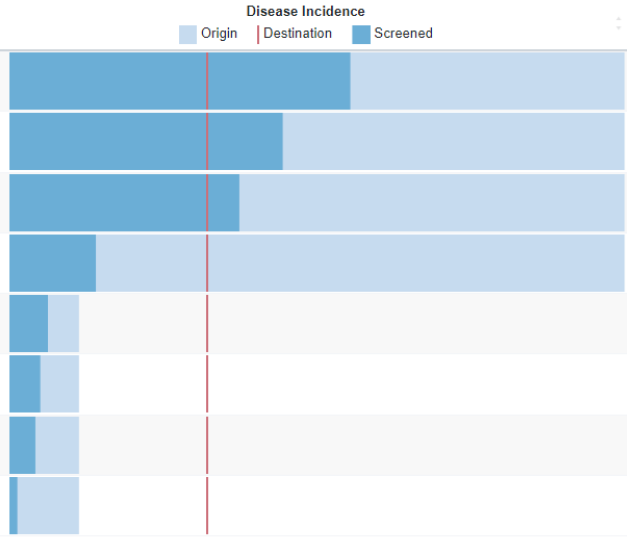
| | Name | | Pre-Departure RT-PCR | Pre-Departure Antigen | In-Airport | Post Arrival RT-PCR | Post Arrival Antigen | Post Arrival Quarantine | |
|---|---|---|---|---|---|---|---|---|---|
| | Antigen 1 day pre-dep | All | -- | day 1 | -- | -- | -- | -- | |
| ✎ | Daily RAT | All | -- | days 0, 1, 2, 3, 4, 5, 6, 7 | -- | -- | -- | -- | 🗑 |
| | In-Airport Antigen Test | All | -- | -- | Antigen | -- | -- | -- | |
| | In-Airport RT-PCR Test | All | -- | -- | RT-PCR | -- | -- | -- | |
| | Quarantine | Unvaxed<br>Vaxed | day 1<br>day 1 | --<br>-- | --<br>-- | days 1, 12, 5<br>days 1, 5 | --<br>-- | 14 days<br>7 days | |
| | RT-PCR 2 days pre-dep | All | day 2 | -- | -- | -- | -- | -- | |
| ✎ | RT-PCR Day 1 | All | day 1 | -- | -- | -- | -- | -- | 🗑 |
| | RT-PCR pre and post | All | day 2 | -- | -- | day 0 | -- | -- | |
| ✎ | Split | Unvaxed<br>Vaxed | day 1<br>-- | --<br>day 0 | --<br>-- | --<br>-- | --<br>-- | --<br>-- | 🗑 |

Create New Strategy

## Analysis Setup

## Test & Screening Analysis

| Origin | Destination | Strategy | Date |
|---|---|---|---|
| New Zealand | Australia | Antigen 1 day pre-dep | 2 Nov 22 |
| New Zealand | Australia | RT-PCR 2 days pre-dep | 2 Nov 22 |
| New Zealand | Australia | RT-PCR Day 1 | 2 Nov 22 |
| New Zealand | Australia | RT-PCR pre and post | 2 Nov 22 |
| United States, California | Australia | Antigen 1 day pre-dep | 2 Nov 22 |
| United States, California | Australia | RT-PCR 2 days pre-dep | 2 Nov 22 |
| United States, California | Australia | RT-PCR Day 1 | 2 Nov 22 |
| United States, California | Australia | RT-PCR pre and post | 2 Nov 22 |




Download Results

# The Boeing TRIP Model

## What is TRIP's purpose?

- An interactive & adaptive tool for assessing SARS-CoV-2 exposure risk in the aviation ecosystem

## How does TRIP work?

- Calculates relative risk of exposure at each step of the journey
- Risk is calculated relative to a location outside the air travel ecosystem
- Estimates control measure effectiveness and economic & operational impact
- Represents perspectives of key aviation industry stakeholders: travelers, airports, airlines, OEMs, travel industry, and government

## How can TRIP be used?

- TRIP demonstrates the combination of control measures that can provide effective risk reduction to restore full system capacity

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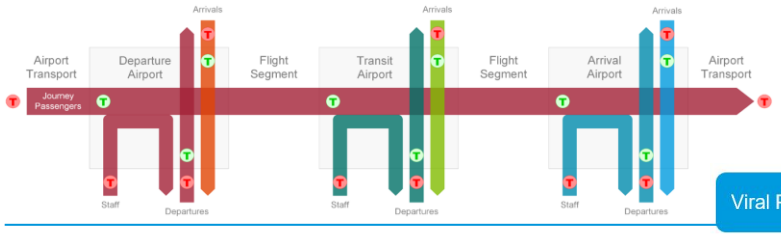
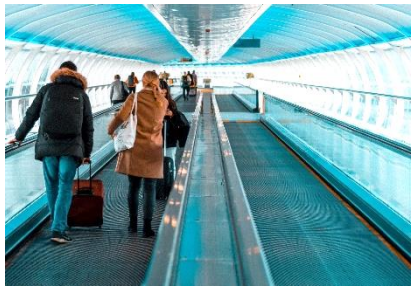
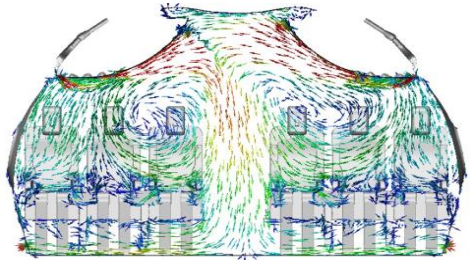
# The Boeing TRIP Model



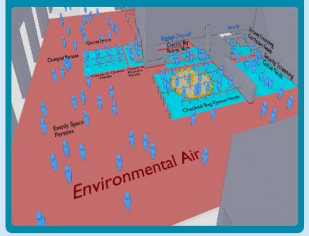





- Viral Prevalence
- Area Layout
- Time in Area
- Activity Level
- Behaviors
- People Density
- Surface Touches
- Air Quality
- Operating Load

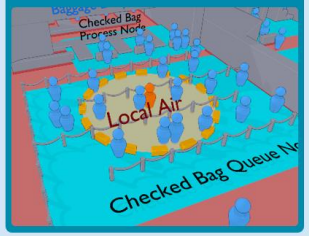
## Exposure Risk

**Background Air**




**Surface**

**Local Air**




**Exposure Risk Baseline**

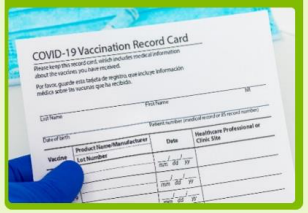
**Benchmark Location**

## Control Measures

**Airborne Exposure Reduction**

**Surface Exposure Reduction**

**Viral Prevalence Reduction**




**Exposure Risk Final**

**Impact**

- Cost
- Fear
- Time
- Hassle
- Demand

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Manage Charts

## Relative Risk

<0.1 <0.5 >2 >10

Hourly disease exposure risk compared to a restaurant in Departure Region

| | Pre Departure | Departure Airport | Onboard | Arrival Airport | Post Arrival |
|---|---|---|---|---|---|
| Baseline | 0.10× | 0.2× | 0.02× | 0.8× | 0.6× |
| Measures | 0.04× | 0.05× | <0.01× | 0.2× | 0.2× |

## Disease Prevalence

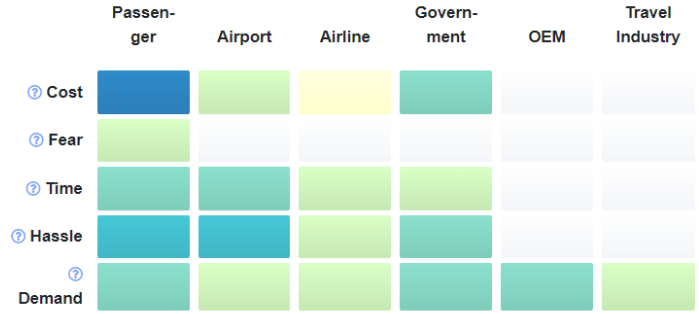
VL L M H VH

Estimated daily new cases per 100k population on 8 Oct 22

| | Origin | Departure Airport | Onboard | Arrival Airport | Post Trip | Destination |
|---|---|---|---|---|---|---|
| Baseline | 100 | 100 | 100 | 160 | 100 | 75 |
| Measures | | 47 | 45 | 70 | 45 | |

## Control Measure Impact

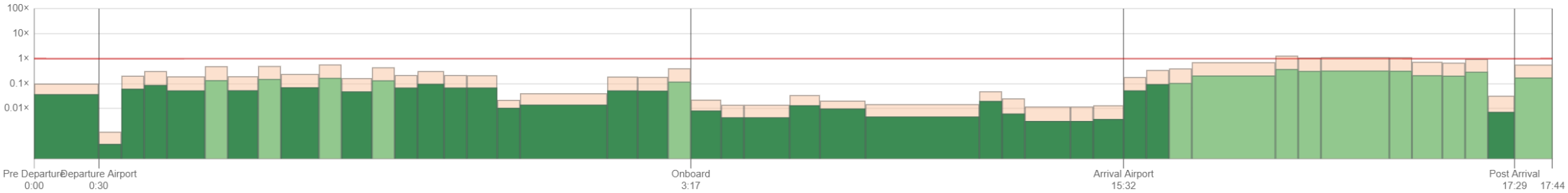
VL L M H VH




## Relative Risk

<0.1 <0.5 >2 >10

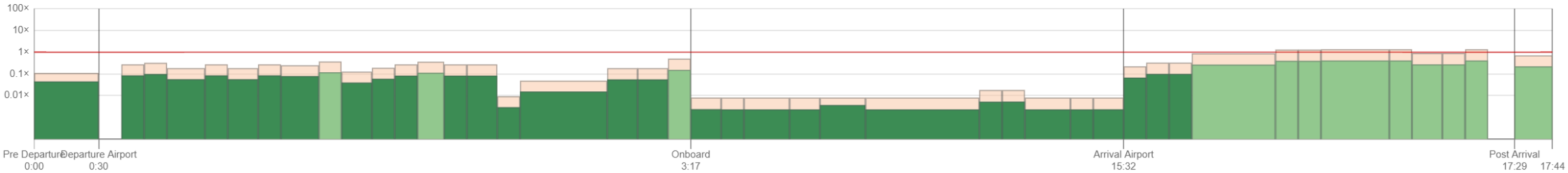
Hourly disease exposure risk compared to a restaurant in Departure Region




## Airborne Background Disease Exposure

<0.1 <0.5 >2 >10

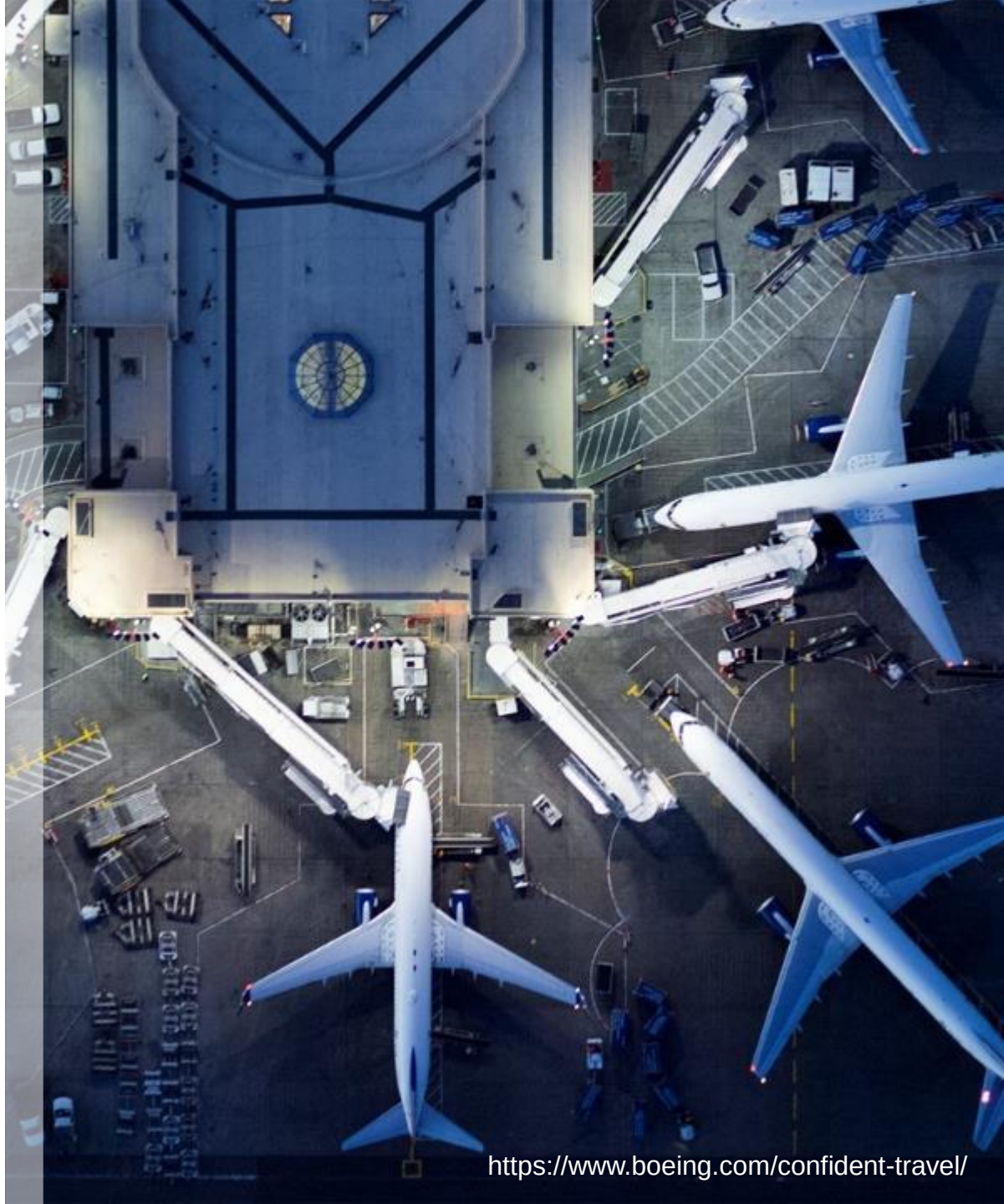
Hourly disease exposure risk compared to a restaurant in Departure Region



# Next Steps

## Further Collaboration

- Ongoing plan to work with health agencies, government research institutes, universities, and regulators
- Develop and publish an independent disease modelling framework for the aviation ecosystem
- Be prepared for the next pandemic



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