

Proof of Value ("POV") Report

# M.P.Shah Hospital



**M.P. SHAH HOSPITAL**  
— *A Legacy of Care* —



# Aura Air®

About us

## Our Company

We improve the health of others by assisting them with one of the most important things in life - breathing. Our innovative air management system eliminates 99.9% of harmful airborne pathogens such as [SARS-COV-2](#), [Influenza A](#), and [RSV](#) while providing real-time data, insights, and recommendations.

### Founded

2018

### Countries

87

### Sq. Ft of Clean Air

+8,150,000

### Warehouses

5

### Listed in TASE

AUSA

### Manufacturing

Beit-el  
industries



# Key Indoor Air Quality (IAQ) Indicators

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## POV Report

### Air Quality Index (AQI)

AQI is calculated based on the air quality parameters according to world-standard of air quality. AQI is usually measured on a scale of 0-500 with 500 indicating the most hazardous environment. AQI less than 50 is considered excellent and AQI less than 100 is considered good.

### Particulate Matter (PM) 2.5 & PM 10

These particles include coarse particles with a diameter of 10 µm or less (PM10) and fine particles with a diameter of 2.5 µm or less (PM2.5). PM10 includes particles such as dust, pollen, and mold. PM2.5 includes particles such as combustion particles, organic compounds, metals, bacteria and more. They are also reported to be the major carriers of microorganisms. The effects of inhaling particulate matter that has been widely studied in humans and animals include asthma, lung cancer, respiratory diseases, cardiovascular disease, premature delivery, birth defects, low birth weight and premature death.

### Volatile Organic Compounds (VOCs)

VOCs are compounds that easily become vapors or gases. They are released from burning fuel such as gasoline, wood, coal or natural gas. In indoor environments, they are also released from many consumer products such as cigarettes, solvents, paints, glues, wood preservatives, cleaners, disinfectants, air fresheners, building materials, pesticides and more.

### Carbon Dioxide (CO2)

CO2 is a colorless gas that is naturally presented in the earth's atmosphere. It is produced by all organisms on earth. In high concentration it can have harmful effects that may include headaches, dizziness, restlessness, difficulty breathing, tiredness and increased heart rate.

### WELL-Standard

The WELL Building Standard® is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and wellbeing. WELL mission is to improve human health and wellbeing through the built environment. WELL is grounded in a body of medical research that explores the connection between the buildings where we spend more than 90 percent of our time, and the health and wellness of its occupants.

# Abstract

POV Report



Company name

M.P.Shah  
Hospital



Locations

Nairobi



Aura Air

2 devices

It is no secret that indoor air quality has recently been brought to the forefront of concerns and for good reason, as it is the leading factor that impacts staff and patients in hospitals. M.P.Shah Hospital partnered with Ademida for a POV test to see how they can reduce their PM levels, ESG, and provide a healthier environment for all. Throughout this report will examine how Aura Air unit can help achieve the hospital goals above. Our devices provide real-time air quality real-time measurements .

The following results are a clear indication of Aura Air's ability to dramatically improve the air quality in this environment and help reduce health risks.



## The Main Achievements



### AQI Improvement

Time spent in good air quality is 63.8%



### Reduce infection Rate

PM 2.5 reduction by 85%, thus reducing the risk of cross contamination between patients and staff.



### Green Building and ESG

Enhance ESG strategy while helping you achieve your goals with up to 7 LEED points and 11 WELL points.

# Introduction

## POV Report

According to the U.S. Environmental Protection Agency (EPA), airborne illnesses such as Covid-19 have much higher chances of spreading indoors rather than outdoors. Particularly in indoor environments where ventilation utilizing outside air is inadequate. Air pollution is one of the most serious environmental threats to urban populations as it causes and exacerbates a number of diseases, ranging from asthma to cancer, pulmonary illnesses and heart disease <sup>1</sup>.

A growing body of scientific evidence has shown that indoor air can be much more polluted than outdoor air. even in the largest and most industrialized cities. According to other research, people spend approximately 90 percent of their time indoors <sup>2</sup>.

According to the NY State Department of Health, medical conditions such as asthma and heart disease can be worsened by exposure to fine particles. Scientific studies have linked increases in daily PM2.5 and PM10 exposure with increased respiratory and cardiovascular hospital admissions, emergency department visits and deaths. Long-term exposure to fine particulate matter may also increase rates of chronic bronchitis, reduced lung function, and increased mortality from lung cancer and heart disease <sup>3</sup>.

Furthermore, the New York Health Department estimates that PM2.5 pollution contributes to more than 3,000 deaths and 2,000 hospital admissions for coronary and respiratory conditions annually <sup>4</sup>.

According to the American Lung Association Breathing VOCs can irritate the eyes, nose and throat, can cause difficulty breathing and nausea, and can damage the central nervous system and other organs. In addition, A correlation has been found between some VOCs and cancer <sup>5</sup>.

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<sup>1</sup><https://www.epa.gov/air-research/research-health-effects-air-pollution#:~:text=Decades%20of%20research%20have%20shown,disease%20and%20other%20health%20problems.>

<sup>2</sup><https://www.epa.gov/indoor-air-quality-iaq/inside-story-guide-indoor-air-quality#:~:text=In%20the%20last%20several%20years,percent%20of%20their%20time%20indoors.>

<sup>3</sup>[https://www.health.ny.gov/environmental/indoors/air/pmq\\_a.htm#:~:text=Exposure%20to%20fine%20particles%20can,as%20asthma%20and%20heart%20disease.](https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm#:~:text=Exposure%20to%20fine%20particles%20can,as%20asthma%20and%20heart%20disease.)

<sup>4</sup>[efaidnbmnnnibpcjpcglclefindmkaj/https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf](https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf)

<sup>5</sup><https://www.lung.org/clean-air/at-home/indoor-air-pollutants/volatile-organic-compounds>

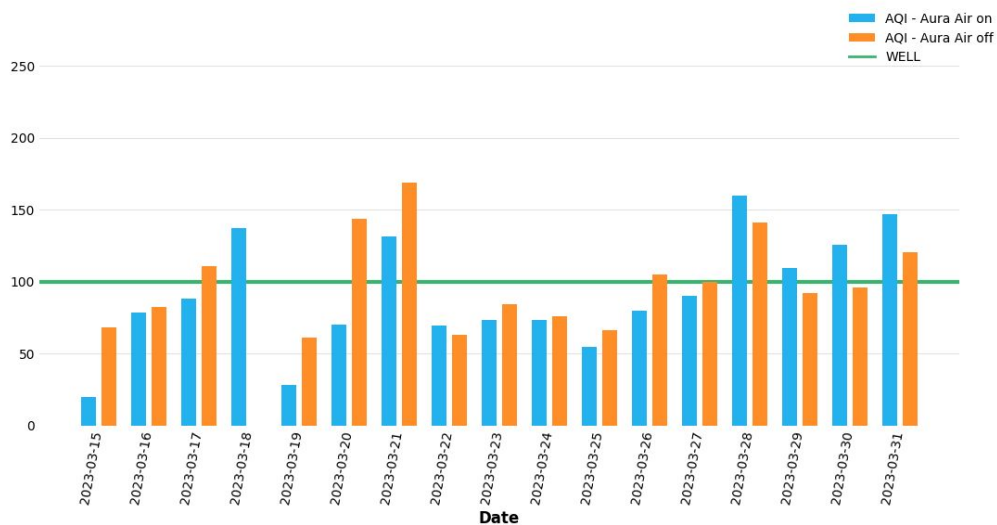
# Results

## POV Report

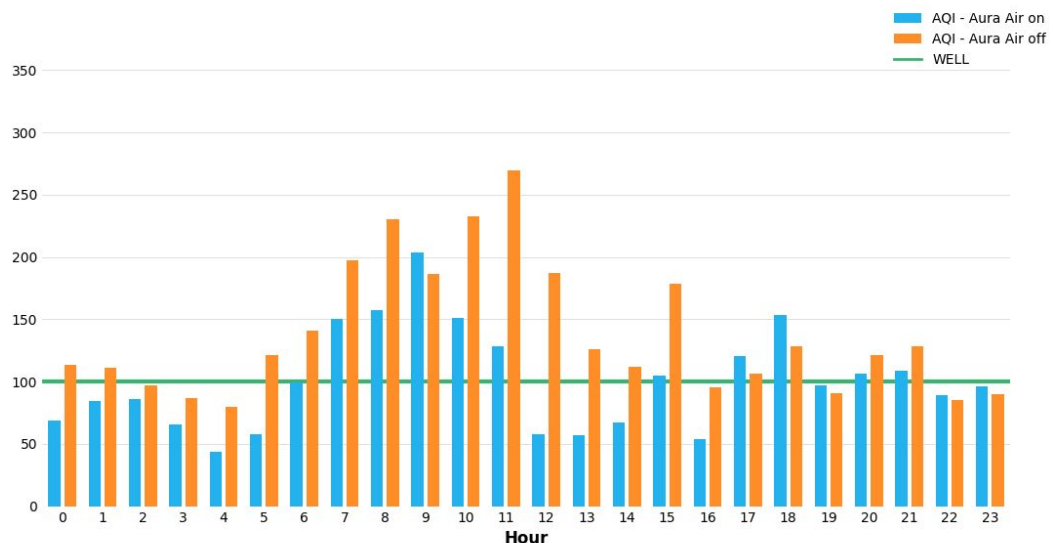


### AQI Improvement

The data presented in the chart below shows that Aura Air was able to maintain healthy AQI levels in the patient room where it was installed, while the control unit in the other patient room experienced higher peaks. **In the test unit, AQI levels rose significantly, exceeding the WELL threshold over 250 times. However, Aura devices were able to reduce these levels to healthy levels in less than 23 minutes on average.** The data below focuses on the entire POV period and suggests that the proper placement and usage of Aura Air in patient rooms can lead to a reduction in AQI levels. It is important to note that on March 18th, only the test unit was functioning, which explains the absence of control unit information.



Here we focus on the time period between March 17-21st, when patients occupied both rooms. It is important to note that during certain hours of the day, guests or patients unplugged the units, thus we have some missing information. **Once implemented Aura Air was able to improve AQI levels by 68.2% vs. 42.3% in the control room.**



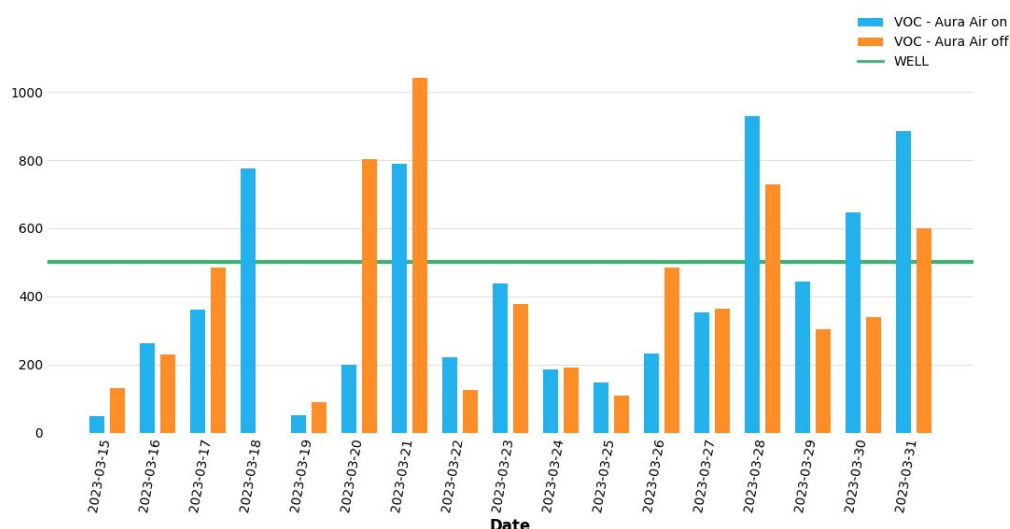
# Results

## POV Report

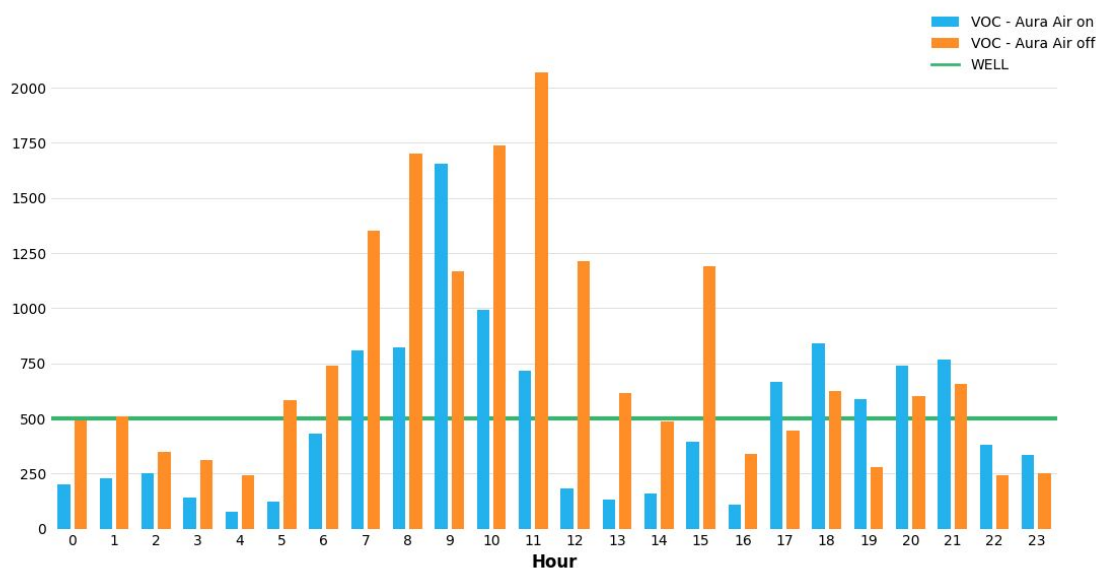


### VOC

Volatile organic compounds, or VOCs, are gases that are emitted into the air from products or processes. VOC levels must be kept as low as possible as they pose severe health risks. Even relatively low levels can cause eye, nose and throat irritation, headaches, nosebleeds, fatigue (tiredness), nausea, and dizziness. **VOC soared more than 220 times above the WELL threshold. On average, Aura devices handled it in less than 16 minutes. Over 77.22% of the time, Aura Air maintains healthy levels of VOC.**



Aura Air recorded that the levels of VOCs in the rooms where patients stayed exceeded the WELL Standard by more than **54 units**, while the control unit recorded an even higher count of **86 units**, despite being handled for less than **17 minutes vs. 23 minutes**. Here too, we had insistent of missing data due to units being unplugged.



# Results

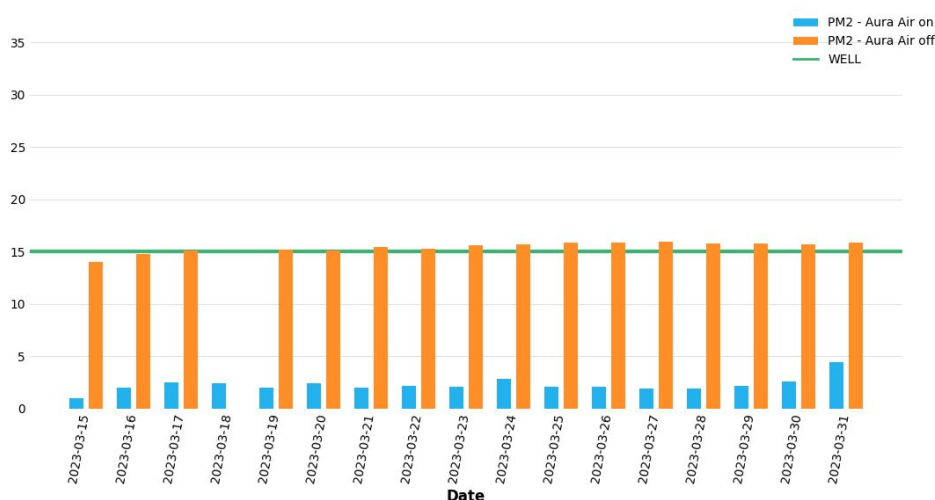
## POV Report



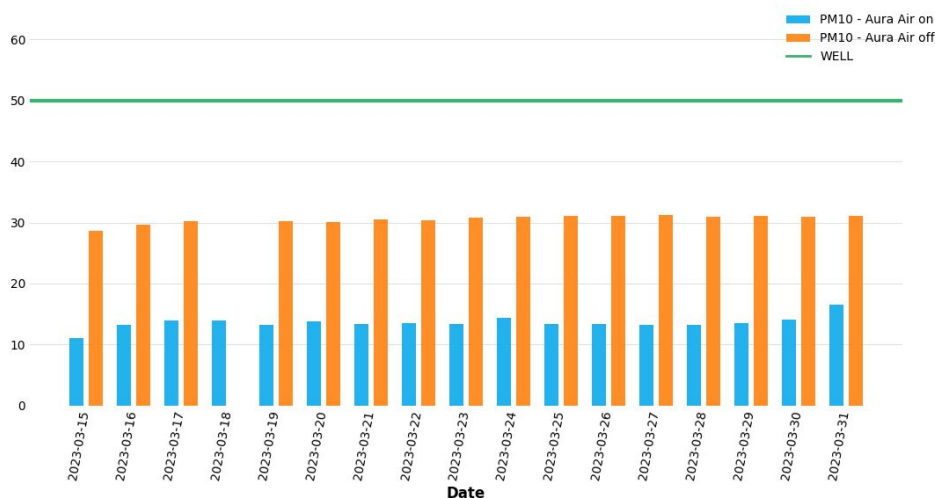
### PM 2.5 & PM 10

The elimination of PM2.5 and PM10 from indoor environment has shown to be very important as it poses a number of health hazards. **Exposure to PM2.5 and PM10 is associated with COVID-19, Influenza A, and RSV**<sup>6</sup>. During the POV, PM 2.5 and PM 10 levels spiked sharply above the WELL standard more than 130 times. We can see below that control unit registered in both cases high amounts of WELL Standard crossing in one patient room, whereas installed unit maintained low levels throughout the POV. This is mostly evident when looking at the PM 2.5 chart below, when the control unit always passed the WELL Standard.

#### PM 2.5



#### PM 10



# Results

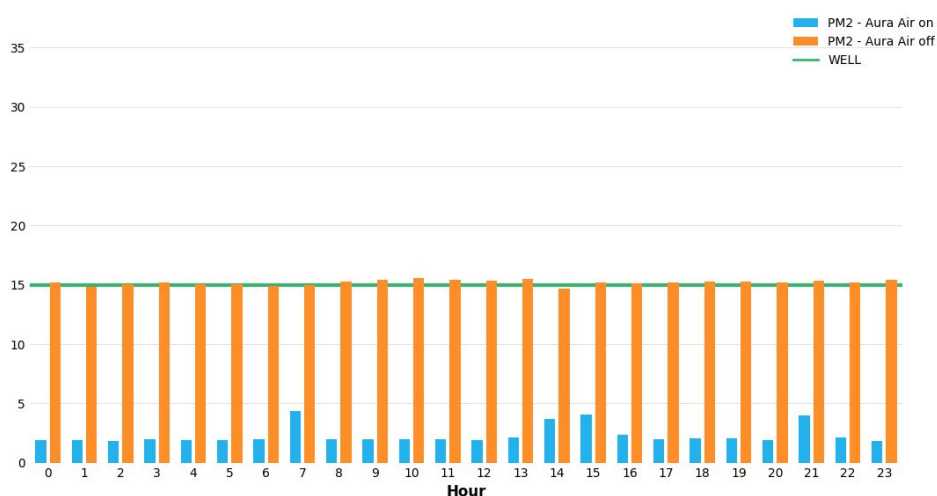
## POV Report



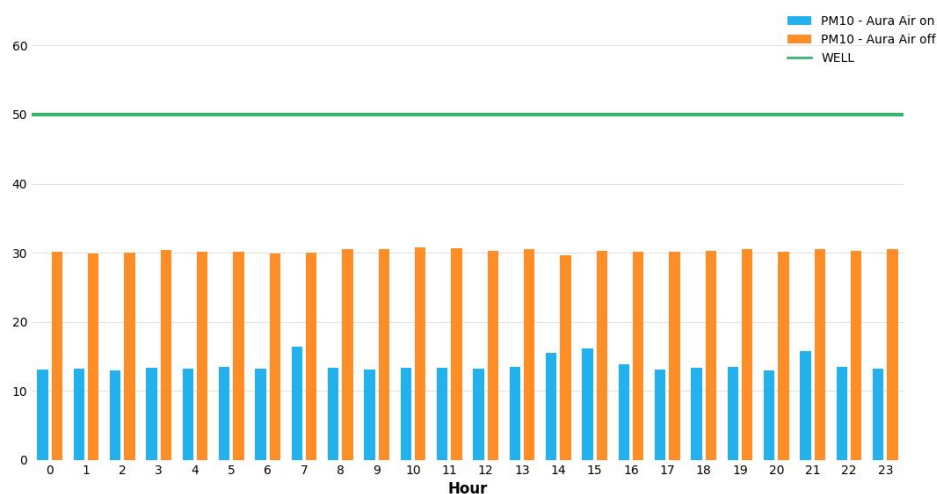
### PM 2.5 & PM 10

On the recorded dates when patients were present, there was a notable improvement of over **70% in the levels of PM 2.5**, which can significantly lower the risk of cross-contamination and prevent staff members from falling sick due to patient exposure. In contrast, during the same period, the control room **recorded over 2,553 spikes of PM 2.5** above the WELL Standard, **whereas only 44 spikes** were recorded in the Aura Air-equipped room.

#### PM 2.5



#### PM 10

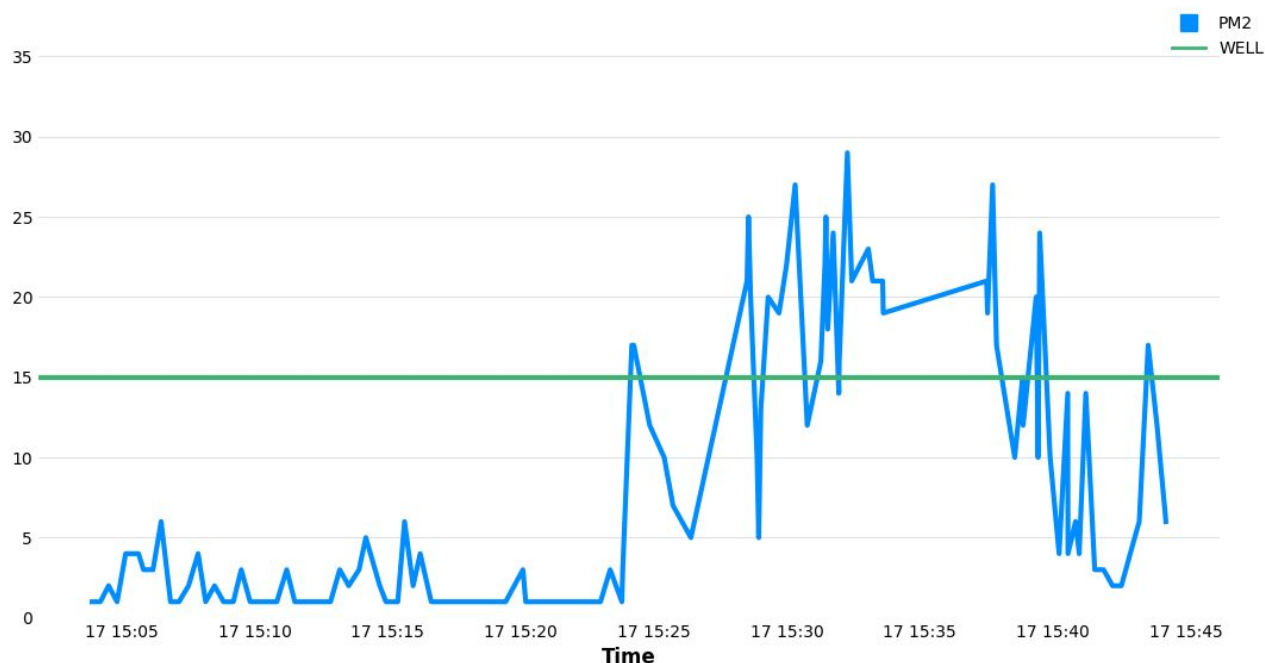




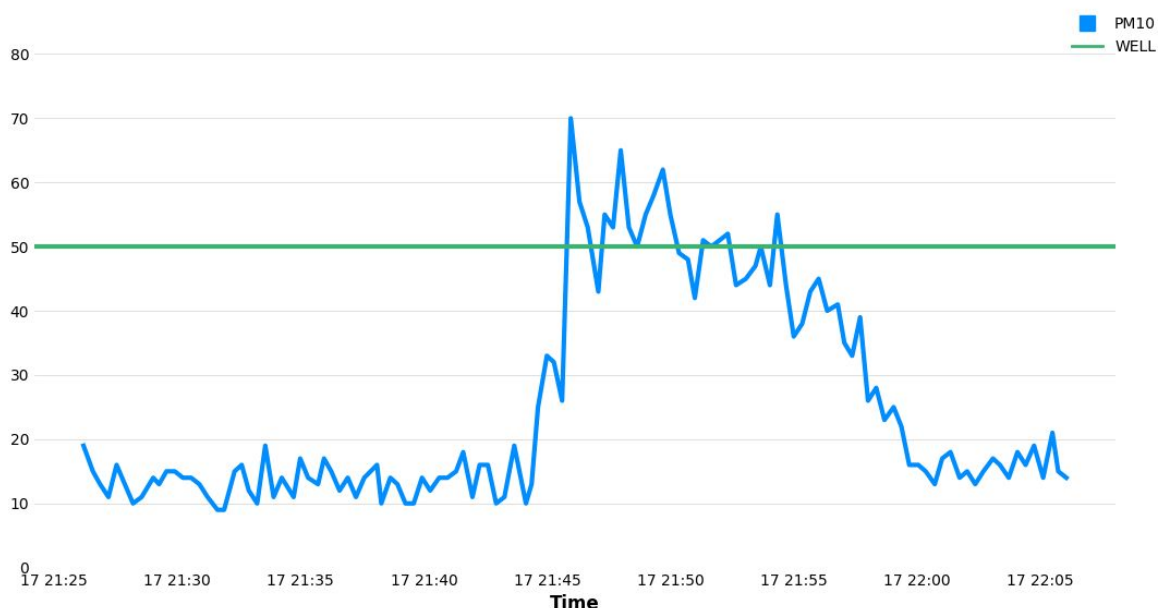
## PM 2.5 & PM 10

Aura Air capabilities were also demonstrated, with the elimination of sharp increases of PM2.5 and PM10, and can be seen in the following charts. **Within less than 2 minutes of responding , Aura was able to eliminate the threat and restore normal values.** The charts below show the PM2.5 and PM10 peaks that Aura eliminated from the events that occurred on March 17th. Once restored to normal levels, **patients and staff enjoyed 85% reduction in PM levels.**

### PM 2.5



### PM 10



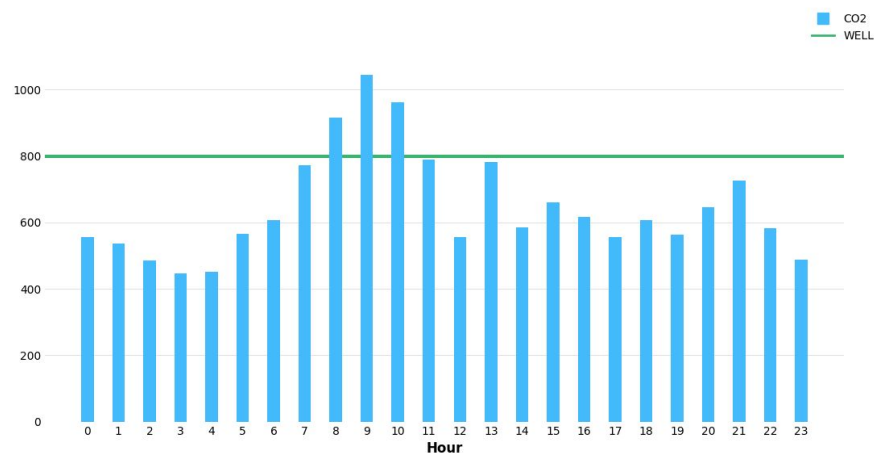
# Results

## POV Report



### CO2

Throughout the POV the Aura Air ® device monitored the CO2 levels in the facility. Below is an hourly chart of CO2 concentration for the entire POV period. There is an increase in CO2 levels in the afternoon and continues into the evening. **According to the CDC, the CO2 levels are a vital component for determining how well a space is ventilated.** With real-time data and insights, you have the ability to better understand the risk of airborne infections. Proactive ventilation practices and intervention, can reduce the airborne concentrations, and reduce the overall viral dose to occupants <sup>10</sup>.



### Monitoring and data collection

Aura Air has a one of a kind monitoring platform that allows access to all of your asset's data 24/7 in real-time. With the Aura web platform you can get actionable insights that will help you improve your indoor air quality, productivity, energy consumption and overall health.





## Energy Efficiency

According to the U.S. Department of Energy, buildings use 76% of total electricity and 40% of total primary energy like natural gas and other fossil fuels. The combination of heating, ventilation, and cooling often consumes the most energy for a commercial building. HVAC systems consume about 40% of a building's energy, according to the Department of Energy.

### IAQP Methodology

With Aura technology, buildings can be based on the ASHRAE 62.1 Indoor Air Quality Procedure (IAQP)<sup>9</sup> instead of the ASHRAE 62.1 Ventilation Rate Procedure (VRP)<sup>10</sup>. While the VRP relies solely on outside air ventilation to maintain IAQ, the Aura Air technology uses sorbent-based indoor air purification and disinfection, which reduces outside airflow requirements and HVAC energy consumption.

### Integration to Building Management Systems (BMS)

With Aura Air's technology, you can measure and receive air quality data in real time, enabling you to regulate fresh air flow and number of air changes to meet regulator-required limits. Interfacing with building management systems (BMS) via API allows optimizing HVAC systems in buildings that support automatic differential systems (systems that control flow to each area adaptively) in a goal to reduce energy consumption.



<sup>9</sup> **IAQP** - A "performance-based procedure" that allows "any method to be used to achieve the contaminant concentration limits.

The IAQP allows ventilation air to be reduced below rates that would have been required by the VRP if it can be reliably demonstrated that the resulting air quality meets the required criteria" set out in the standard

<sup>10</sup> **Ventilation Rate Procedure (VRP)** - VRP is a prescriptive procedure in which outdoor air intake rates are predetermined for various space types (occupancy categories) based on contaminant sources and source emission rates that are typical for the space type. IAQ is achieved by diluting contaminated indoor air with "fresh" outside air without any consideration for the actual quality of outside air, actual building emission rates, or other environmental factors that impact IAQ.



## ESG

The GRI (Global Reporting Initiative) Standards represent global best practice for reporting publicly on a range of economic, environmental, and social impacts. Sustainability reporting based on these Standards provides information about an organization's contributions to sustainable development in a structured way that is transparent to interested parties. The Sustainable Development Goals (SDGs) are global goals set out by the United Nations, used by companies to measure their Environmental, Social, and Governance (ESG) credentials. It is a collection of 17 interlinked global goals designed to be a "shared blueprint for peace and prosperity for people and the planet, now and into the future" <sup>11</sup>. **Below are the benefits associated with Aura Air's systems attributable to M.P. Shah Hospital by using Aura Air's systems:**

- **The reduction of particles, VOCs and pathogens in indoor environments creates cleaner, safer and healthier places.**

In experiments conducted by the Ministry of Health and the Ministry of Education in Israel, it was found that Aura Air systems reduced Covid-19 infections at a rate of approx. 30%. This outcome is in accordance with "Fight Communicable Diseases" and "Reduce Illnesses and Death from Hazardous Chemicals and [Air] Pollution" guidelines (SDG targets 3.3 and 3.9) and shall be disclosed, inter alia, under the subjects: "a description of any voluntary health promotion services and programs offered to workers to address major non-work-related health risks..." (GRI Standard 403-6-b)<sup>12</sup>. It is also shall be disclosed, inter alia, as "actions taken or underway to eliminate these hazards and minimize risks" (GRI Standard 403-10-c).

- **Real-time monitoring and measuring of the components of the air pollution (such as PM and VOCs) provide an updated accurate picture of the air quality on-premises, including information on air pollution-related hazards.**

Using this system, organizations can receive real-time data about health risks associated with poor air quality, identify safe spaces and spaces where infections are likely to occur, and receive alerts and recommendations in real-time. This outcome is in accordance with the "Improve Early Warning System for Global Health Risks" guideline (SDG target 3.D) and shall be disclosed, inter alia, under the subjects: "actions taken or underway to eliminate work-related hazards that pose a risk of ill health and minimize risks" (GRI Standard 403-10-c).

- **Using Aura Air technology, HVAC systems operations can be optimized in order to enhance energy efficiency and to reduce Greenhouse Gas (GHG) emissions.**

This outcome is in accordance, inter alia, with "Improvement in Energy Efficiency", "Reduce the Environmental Impact of Cities", "Sustainable Management" and "Strengthen Resilience and Adaptive Capacity to Climate Related Disasters" guidelines (SDG targets 7.3, 11.6, 12.2, 13.1). It shall reduce or affect the values that shall be disclosed, inter alia, under the subjects: "Electricity, Heating, Cooling Consumption", "Total Energy Consumption Within the Organization", "Amount of Reductions in Energy Consumption Achieved as a Direct Result of Conservation and Efficiency Initiatives", "Total Fuel Consumption within the Organization" (GRI Standard 302-1, 302-4) and "Extent of Development of Significant Infrastructure Investments and Services Supported" (GRI Standard 203-1).

<sup>11</sup> No poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, Reduced Inequality, Sustainable Cities and Communities, Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land, Peace, Justice, and Strong Institutions, Partnerships for the Goals. See here: <https://sdgs.un.org/goals>.

<sup>12</sup> <https://www.globalgoals.org/goals/3-good-health-and-well-being/>; <https://www.globalreporting.org/media/lbvnxb15/mapping-sdgs-gri-update-march.pdf>

# Conclusion

## POV Report

In conclusion, our trial has demonstrated Aura Air's ability to mitigate threats and substantially improve M.P. Shah Hospital Indoor Air Quality and ESG.

Poor indoor air quality is directly correlated to overall health, acute illness and spread of airborne infectious disease. According to the CDC, indoor air purifiers can help reduce airborne contaminants and reduce exposure to SARS-CoV-2 and Influenza aerosols.

PM2.5 & PM10 are a major factor in the spread of viruses and airborne illnesses. Aura Air maintains extremely low levels of PM2.5 & PM10, **reducing the chances of infection** and long-term health effects, all while allowing the ability to monitor and view the trends of the AQI. With an improvement in all levels, Aura Air helps **reduce health risks** such as headaches, poor coordination, nausea and cancer risk.

### Aura Air implementation at the hospital can lead to:

- A reduction in illnesses among patients and staff.
- Reduced risk of infection from Covid-19, Influenza, RSV, and other airborne diseases.
- Fostering of a sanitary and healthy environment for patients care and medical staff.
- BMS Connectivity through Aura Air Rest API
- Increase ESG awareness

**VOC Patient  
Improvement  
By 24%**



**Risk of  
Infection**



**PM 2.5 Overall  
Improvement  
by 85%**



**PM 2.5 Patient  
Improvement by  
70%**





Aura Air® created the world's smartest data-driven air purification system, one that cleanses indoor air while vigilantly monitoring the quality in real-time. With an award-winning design and patented technology, the system eliminates 99.99% of harmful airborne pollutants.

Founded in 2018, Aura Air ® helps to purify the air in homes, hospitals, schools, businesses, hotels, restaurants, buses, and nursing homes in more than 50 countries worldwide.

For more information, visit:

[www.auraair.io](http://www.auraair.io)