How Can Pollen Data Revolutionize The Digital Healthcare Industry?

Pollen. The word associates itself with the flowering season or typically the spring. While it marks a new beginning for flora, it can turn into a hazard for humans.

Pollen is essential for plant reproduction, but it can also cause allergies in humans and animals. When inhaled, pollen can trigger an immune response in individuals with allergies, leading to symptoms such as sneezing, congestion, itchy eyes, and respiratory problems. The severity of symptoms can vary depending on the type of pollen, the concentration in the air, and the sensitivity of the individual.

In this paper, we will dive deep into the effects of pollen on human health and how pollen data is the way forward for managing those effects.

The visible effect of invisible pollen particles

As we know, pollen can affect people's health in different ways, depending on the individual's sensitivity and the amount of pollen in the air. For some people, exposure to pollen can trigger allergic reactions, such as hay fever or allergic rhinitis, while for others, it can cause issues such as asthma.

In today's time, approximately 10 to 30% of adults and up to 40% of children in the United States are affected by allergic rhinitis. The numbers will only increase over time with extending pollen periods and seasons due to climate change.

Get an expert's opinion on pollen-caused diseases. Read more.

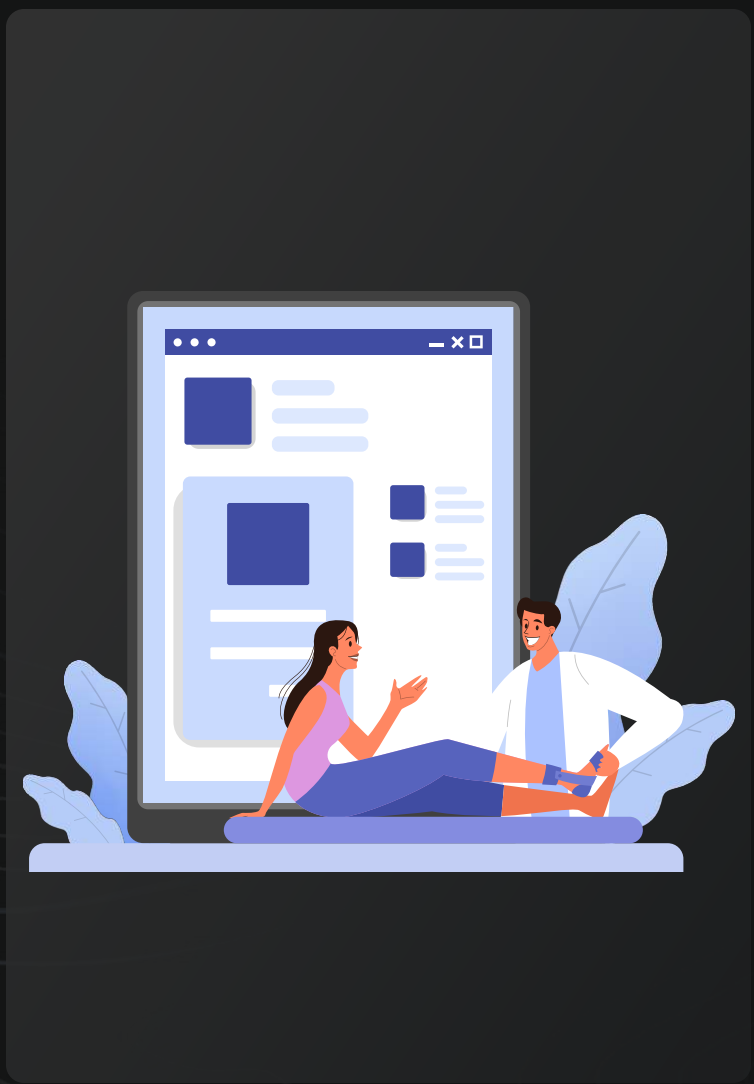
A study published in the Lancet Planetary Health in 2020 found that pollen seasons are starting earlier and lasting longer in many parts of the world, which could increase the burden of allergic diseases. It is estimated that the U.S. could face up to a 200% increase in pollen production by the end of the century due to high rates of carbon dioxide emissions.

A study also found that exposure to high pollen levels during the COVID-19 pandemic was associated with an increased risk of contracting COVID-19. It suggests that pollen exposure could exacerbate respiratory symptoms and make people more susceptible to respiratory infections.

The potential of pollen data in digital healthcare

While medications are available for pollen allergies, it still is essential to stay clear and manage triggers to avoid being affected in the first place. Data plays an essential role in this. The rising risks of pollen-related issues provide digital healthcare with an opportunity to use pollen data. Pollen data can be a vital tool for digital healthcare, as it can help healthcare providers and patients better manage allergic conditions and improve overall health outcomes.

There are multiple ways in which digital healthcare businesses can leverage the power of pollen data to improve their patient's lives.



Personalized treatment

When it comes to pollen exposure, the impact varies from person to person in different ways. A one-size-fits-all solution becomes inadequate in this situation. Pollen data plays a significant role in creating personalized healthcare plans to help patients live healthier lives.

Personalized healthcare involves regularly monitoring symptoms but with a deeper consideration of the patient's environment, genes, and lifestyle. This helps formulate unique treatment plans and prevention strategies. Pollen data can help identify the specific allergens that trigger symptoms in individual patients, enabling healthcare providers to tailor treatment plans to their needs. This can lead to more effective treatment and improved health outcomes.

Digital health platforms act as the necessary mechanisms to understand patients and their conditions better. Doctors can also recommend monitoring periods, pharmacotherapy, and allergen-specific medicines with the help of pollen data.

Improved allergy management

Pollen data can empower patients to take control of their health by themselves. By integrating pollen data into digital healthcare platforms or apps, patients can make informed decisions about when and where to engage in outdoor activities. The risk levels recommended by NAB are one way for patients to understand the risks they are exposed to, and it helps them take preventative measures to reduce their exposure to pollen.

Pollen Risk Levels And What It Means For Allergy Sufferers

Risk level	Tree	Grass	Weed	Symptoms
Low	0 - 95	0 - 29	0 - 20	Individuals susceptible to pollen will experience mild allergic symptoms.
Moderate	96 - 207	30 - 60	21 - 77	Many individuals sensitive to pollen will experience allergic symptoms.
High	208 - 703	61 - 341	78 - 266	Most individuals with any sensitivity to pollen will experience allergic symptoms. Extremely sensitive people could experience relatively serious symptoms.
Very High	704+	342+	267+	Almost all individuals with any sensitivity to pollen will experience symptoms. Extremely sensitive people could have severe symptoms.

*Source: National Allergy Bureau

The table considers the National Allergy Bureau (NAB) guidelines and the extended season for each pollen type, giving a list of the risks associated with pollen. If patients know the associated risks, they can better manage their allergies and asthma and improve their overall quality of life.

Better patient recommendation and experience

Individuals with mild pollen allergy do not often require extensive medical care. With simple pollen count monitoring and constant medical advice, the symptoms can be managed easily.

With comprehensive data on pollen types, species, and counts, it becomes easier to reduce the risks. Taking the medical history of the patient and their ambient environment data, patients can utilize the recommendations suggested by the healthcare system to steer clear of certain areas.

Pollen data can also be used to develop early warning systems for asthma and allergy patients. By tracking pollen levels, healthcare providers can identify periods of high pollen exposure and issue alerts to patients, advising them to take preventative measures or adjust their treatment plans accordingly. This recommendation system helps health organizations improve patient communication and prevent symptoms more conveniently through digital technology.

Remote patient experience for allergy sufferers

Remote patient experience can be achieved using a range of technologies and pollen data. These technologies can help personalize information regarding pollen levels in the individual's local area, along with tips on managing their symptoms.

For example, a mobile app could alert users when pollen levels in their area are high. The app could also provide information on the pollen count for the upcoming days, allowing users to plan their activities accordingly.

Web-based platforms can also provide users with personalized information on pollen levels and allergy management. These platforms could include features such as interactive pollen maps, where users can view pollen levels in their area and get recommendations on reducing their exposure.

The right stop for pollen data–Ambee

Healthcare businesses can leverage Ambee's hyperlocal and accurate pollen data to create valuable campaigns to help their customers understand the state of pollen-related issues and offer solutions through personalized healthcare.

Ambee provides global pollen data with a demonstrably high degree of accuracy and street-level granularity. Ambee's pollen data is generated by combining data from proprietary on-ground sensors, satellites, and multiple open sources.

Ambee's pollen data enables anyone, anywhere in the world, to understand their hyperlocal environment in real time. The datasets provided by Ambee are used to power decisions across continents, from startups to Fortune 500 companies. Using the pollen count data, companies can create valuable campaigns and solutions that help their customers avoid seasonal allergies and tackle them all together.

Some of the features of Ambee's pollen data include:

Granularity: Ambee's pollen data has a granularity of 5 sq km with the ability to go more granular if required.

Data availability: Ambee's real-time pollen data is updated hourly; forecast data for up to 120 hours; and historical data for up to ten years with the last 48 hours available on the APIs.

Data coverage: Pollen data by Ambee and the subspecies are available in locations across Europe, Asia, the USA, Mexico, Canada, Australia, and New Zealand.

For further details on pollen API and its response parameters, please visit our API documentation page.

The proven power of Ambee's pollen data

Kleenex

Ambee assisted Kimberly-Clark Corporation in producing Pollen Pal, a digital health solution, for their customers to make informed decisions. This helped KCC not only alert their customers on pollen count and share insights on associated risks but also enhance customer engagement. The product allowed users in Europe to understand the impact of pollen actively and provided a way for those looking to reduce pollen exposure and live healthier lives. Their platform garnered 100k visits in the first week alone and now has around 30,000 unique visitors daily. As a result, the campaign was deemed 'exceptional' in terms of return on ad spending.

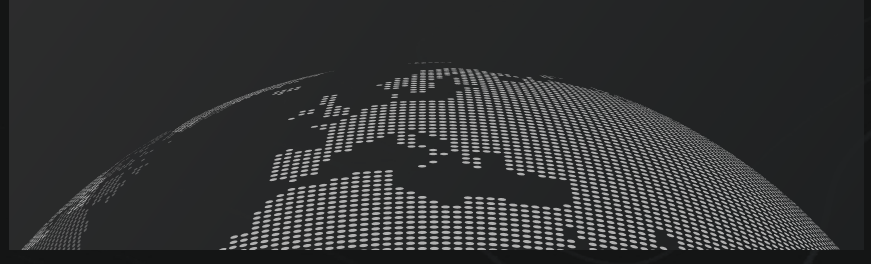
Read more about how Ambee's pollen data helped Kleenex here.

Wellthy

Due to the rising risks of pollen-related health issues, Wellthy Therapeutics aimed to achieve better diagnoses and create personalized treatment plans for their customers. In collaboration with Ambee, they provide detailed information on a patient's exposure to hazardous pollutants and pollen allergens directly to the patient or even to the patient's physician if authorized. This

helps the customers better understand the air around them to minimize the effects.

Here are the details of this partnership.



The proven power of Ambee's pollen data

Juli

To help minimize the effects, juli, a digital health company, turned to air quality and pollen data by Ambee. They added Ambee's air quality and pollen data to their digital health platform to help customers better identify how these factors impact their health and help them manage their conditions with data-backed decisions.

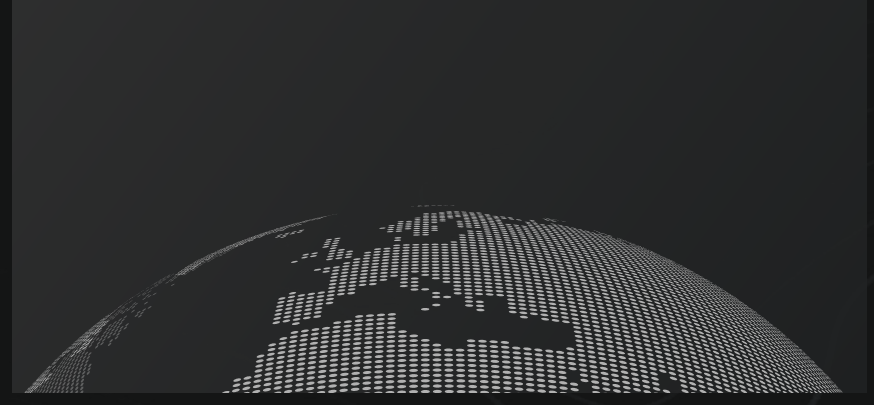
This partnership also initiated a massive app retention rate (26%) and customer engagement (2.2 times per week on average) for juli while simultaneously making lives easier for their customers.

Read more.

Sonohaler

Ambee also partnered with Sonohaler, a digital healthcare company, to provide real-time air quality and pollen data for their smart asthma devices. This helps their customers stay alert about their environment's pollen or pollution levels and help them live healthier lives.

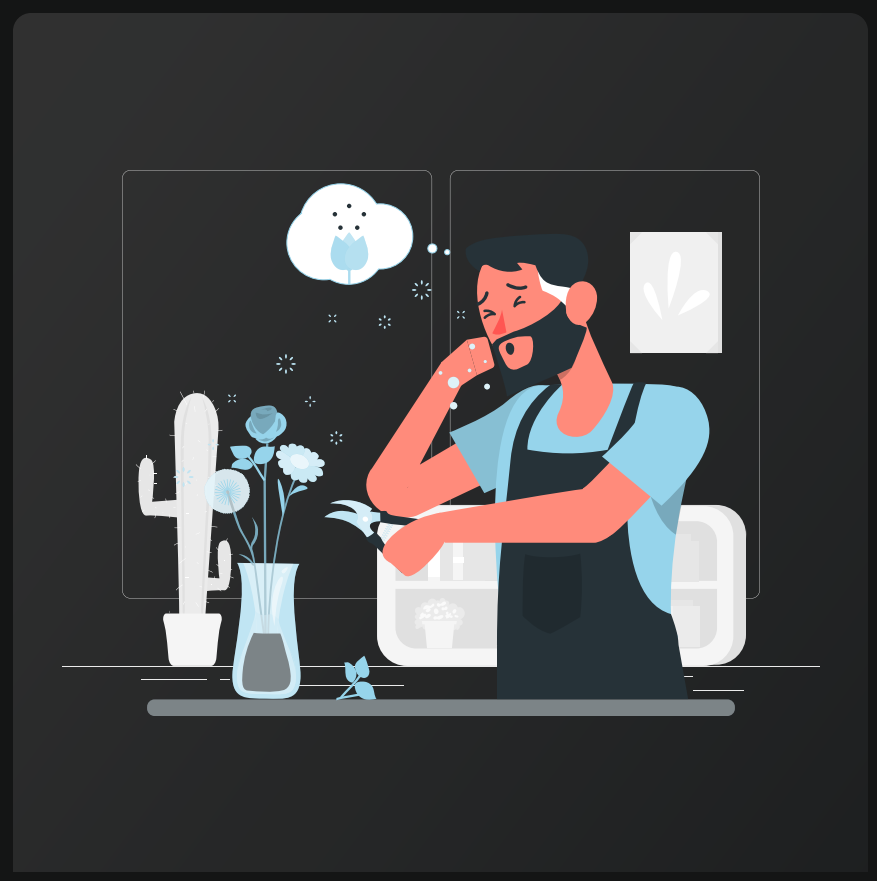
To better understand the problem posed by pollen and how the world's technologies are tackling it, read our expert-led article.



The future of digital healthcare—how can pollen data help?

The future of digital healthcare is promising due to technological advancements and data analytics. These can enable more effective management of allergies and asthma while helping with the development of healthcare products that could shape the future of digital healthcare.

With pollen data integrated into different healthcare systems in the digital space, it will be much easier to issue alerts to patients when specific allergens are high. Patients could receive notifications on their smartphones or wearable devices, enabling them to take preventative measures to reduce their exposure to pollen.



Forecast pollen data can also enable predictive analytics to anticipate future pollen levels and predict allergic reactions. By analyzing historical pollen data and other environmental factors, predictive analytics could help

healthcare providers develop early warning systems and improve patient treatment plans. The added potential of AI and machine learning can also revolutionize how we manage allergies and asthma. These technologies can enable personalized treatment plans and improved health outcomes for patients with pollen-related conditions.

At Ambee, we aim to help advance healthcare systems with our datasets. With the help of accurate data and relevant insights, the digital healthcare industry can create products or upgrade services that can not only help patients manage their conditions but reduce the risks in the days to come.

To learn more about the role of pollen data in digital healthcare, get in touch.