

### Gecko Health Innovations **CareTRx**

## Helping children adhere to treatment plans by combining smart digital design with existing pediatric inhalers

*Ximedica helped a drug delivery startup develop their proof-of-concept into a fully realized, digitally-enabled clinical device.*

### **The Problem**

Affecting one in every ten kids, pediatric asthma is the most prevalent chronic disease among infants and children. Obstructing airflow, asthma causes rapid and labored breathing, often resulting in activity restrictions, putting undue stress on both children and their parents. Promoting daily medication adherence can help to improve the efficacy of pediatric asthma and reduce treatment costs but developing a regimented habit in children who are not under constant watch by the caregiver comes with challenges.

### **Background**

Ximedica was approached by Gecko Health Innovations, a two-person startup company from Cambridge, MA, to help transform their idea into a clinical device.

Gecko created a proof of principle for their CareTRx device, a cloud-based “smart” inhaler attachment that helps pediatric asthma and COPD patients adhere to their treatment plans. Gecko’s concept could be affixed to the top of most metered dose inhalers and digitally connect to the patient’s or caregiver’s smartphone. The device then tracks how often the patient uses their inhaler and provides feedback on their medication management, as well as reminders for scheduled doses.



## Innovation Opportunity

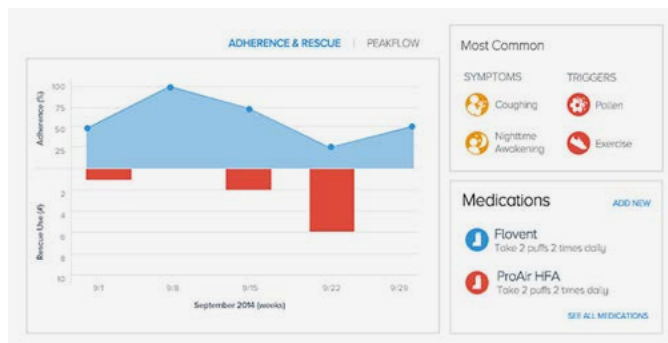
The Gecko CareTRx system provided an opportunity to design and develop one of the first digital inhaler attachments on the market, essentially creating a “smart” inhaler. In addition to fitting most metered dose inhalers, the device requires a seamless connection to the patient’s smartphone to ensure usage metrics are accurate and consistent. With Ximedica focusing on design and development, GeckoCap could focus their energies on software development, both integral pieces to the success of the device.

## Ximedica’s Involvement

Incorporating information gleaned from key leaders in the payer and provider networks, Ximedica took GeckoCap’s proof of principle and began designing prototypes and conducting shelf-life testing. This input led to the creation of a cap that fit most types of metered dose inhalers, which in turn shifted their development for clinical trials to a prescription device approval process.

## Ximedica Skills Used

- Connected Health
- Human-Centric Design
- Consumer-Grade Packaging Design and Development
- Innovation on a Startup Budget
- Cost Reduction
- Shelf-life Testing
- Material Science





## Value Delivered

Ximedica took Gecko Health innovations' proof of principle prototype and developed it into a commercial grade device. The CareTRx cap integrates Gecko's software with customized hardware and firmware. Development included extensive human factors and usability testing, regulatory and quality support, and the creation of commercial grade packaging.

Utilizing our vertically integrated, modular structure, Ximedica was able to provide Gecko with various quality management services and supply chain systems in parallel with design and development services, dramatically reducing Gecko's costs and accelerating their development timeline. Gecko Health Innovations was acquired by Teva Pharmaceutical in 2015. Backed by a comprehensive development strategy, CareTRx received the full value of their acquisition agreement.

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