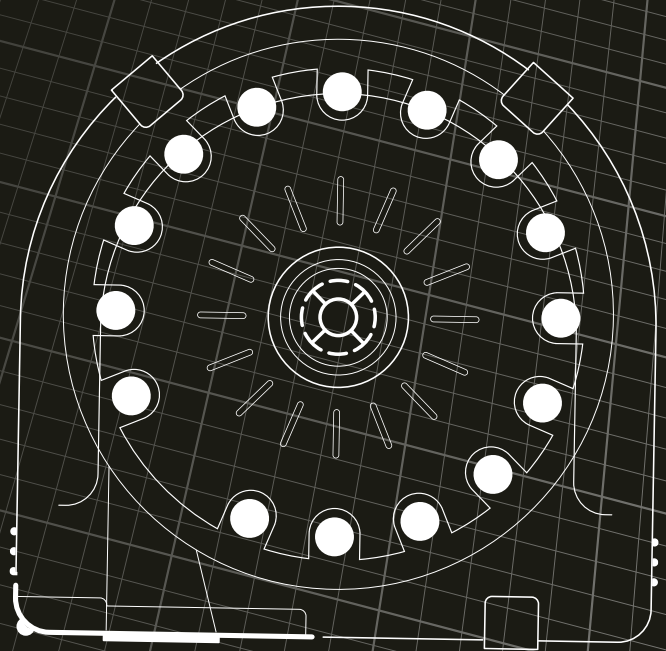# FATHOM.

DIGITAL MANUFACTURING. **REIMAGINED.**

Case Study //

Smart Medication Dispenser

A customer came to Fathom for help refining the design of a device that provides controlled access to medication. **Fathom improved its manufacturability and provided fast-turn prototype parts to speed its development.**

Problem //

MedicaSafe specializes in developing innovative medical products that combine drugs, devices, and Healthcare Information Technology (HCIT) to facilitate remote therapeutic monitoring (RTM) and elevate chronic care management (CCM).

In 2018, fueled by an initial grant from the National Institutes of Health (NIH), MedicaSafe designed a revolutionary device to address Opioid Use Disorder (OUD). This unique product features sublingual medications enclosed in tamper-evident cartridges, dispensed through a SmartKey. It logs and reports each authorized dose, ensuring that patients only take them as prescribed.

MedicaSafe recognized the importance of strategic collaboration and turned to Fathom to help develop early prototypes and provide guidance for future production goals.

Solution //

Fathom Streamlined Iterative Product Development

Improving Manufacturability // Fathom provided the expertise MedicaSafe needed to refine the design of its cartridge and SmartKey to improve the product's manufacturability while meeting stringent material and production documentation compliance needs.

Fast-Turn 3D-Printed Parts // Fathom streamlined this process by providing 3D-printed parts on a fast-turn basis. These additive technologies helped the MedicaSafe team check fit, finish and functionality, while the Fathom team helped keep this iterative process moving smoothly.

Rapid Tooling // A major step in the product development process was producing a quantity of these devices sufficient for MedicaSafe's field trials. Fathom's Chinese manufacturing partner **produced tooling and injection-molded prototypes within weeks.** This manufacturing option helped MedicaSafe manage its product development costs.

Fathom sourced a USP Class VI material and worked with MedicaSafe to ensure that all materials were listed in the FDA's CFSAN database. Fathom's engineering staff provided material and colorant documentation for the injection-molded parts and helped the MedicaSafe team gather documentation to **meet stringent FDA materials reporting requirements.**
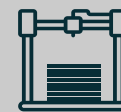
Results //

The MedicaSafe product has undergone rigorous verification and validation testing, specifically ISO 60601, EMC/FCC testing. It also underwent a rigorous biocompatibility assessment, demonstrating its efficacy and meeting all necessary standards. It is now actively deployed to address pressing unmet needs among patients with Opioid Use Disorder (OUD).

Services Used //

Additive Manufacturing (MJF, FDM and Polyjet)

Injection Molding

Talk to an Expert //

Working with Fathom means easy access to Additive and Advanced manufacturing experts. Contact us today, and let's transform the future of manufacturing together!

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