# Cloud-Based Pulmonary Spirometry System

Tech ID: 27560 / UC Case 2016-923-0

## BRIEF DESCRIPTION

Inventors at UC Irvine developed a portable spirometry system that automatically uploads patient pulmonary data to the Internet, and provides a cloud-based platform to analyze and share the data with an attending healthcare professional.

## FULL DESCRIPTION

Home monitoring of lung function is becoming increasingly important in the management of asthma and chronic obstructive pulmonary disease (COPD), which affects over 400 million people. Spirometers measure the speed (airflow) and lung volume of air in and out of the lungs. Thus, spirometers are used by healthcare professionals to diagnose chronic lung conditions and to determine drug efficacy in the clinic. Importantly, patients also use spirometers outside the clinic to monitor whether a treatment for their chronic lung condition is improving their breathing. However, existing portable spirometers for use outside the clinic have no way of automatically uploading patient pulmonary data to the Internet to share with an attending healthcare professional.

Researchers at UC Irvine developed a portable spirometer for use outside the clinic that collects data on patient pulmonary function that is encrypted, uploaded to the Internet, and analyzed through cloud-based services, which can be shared with an attending healthcare professional.

## SUGGESTED USES

The portable spirometer can be used to monitor a chronic lung condition and treatment efficacy at home by a patient, and automatically upload patient pulmonary data to the internet for monitoring by a healthcare professional. It can also be used by patients or healthcare professionals to find the cause of chronic lung conditions and assess the effects of contaminants on lung functions, generally.

## ADVANTAGES

The portable spirometer allows an easier method to streamline patient data analysis, reporting, and monitoring in a cloud-based platform.

## STATE OF DEVELOPMENT

Device is currently in development.

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## OTHER INFORMATION

## CATEGORIZED AS

- **Biotechnology**
  - Health
- **Communications**
  - Internet
  - Wireless
- **Engineering**
  - Engineering
- **Medical**
  - Devices
  - Diagnostics
  - Disease: Respiratory and Pulmonary System
  - Other

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