

# Elucid mHealth awarded US patents for its groundbreaking patient medication adherence system

*OECD estimates non adherence to pill regimes cause 200,000 premature deaths a year in EU and costs EUR 125 billion in the US \$105 billion in US*

MANCHESTER, UNITED KINGDOM, September 17, 2019 /EINPresswire.com/ --

Elucid's Pill Connect system which has now successfully completed two robustness clinical trials has been granted two patents covering; the dispensing methodology, link to a mobile phone and tracking and recording of each dispense. Three further patents are in progress.

James Burnstone CEO of Elucid mHealth "We are delighted with the progress we have made and the interest from so many CROs and pharma companies. Our initial robustness trials, which exceeded 90% successful dispenses and recording of each dispenses remotely, highlighted areas for improvement. We are now confident that the new smart bottle will achieve  $\geq 99\%$  reliability"

Adherence is a major problem in both clinical trials and in the community. A 2018 report by the US National Institute of Health<sup>1</sup> found that "Nonadherence to medications is a worldwide phenomenon and it has been found that in developed countries, adherence rate, expressed as a percent of prescribed doses taken, averages around 50% for chronic illnesses."

Figures from the OECD<sup>2</sup> estimate poor adherence contributes to nearly 200 000 premature deaths in Europe per year with an estimated cost EUR 125 billion in the US USD 105 billion per year in avoidable hospitalisations, emergency care, and outpatient visits.

Patients with chronic diseases are particularly vulnerable to poor health outcomes if they do not adhere to their medications. Mortality rates for patients with diabetes and heart disease who don't adhere are nearly twice as high as for those who do adhere.

## How the Pill Connect system works

- Preparation - A patient has an app loaded onto their mobile phone (iPhone or android) which contains the pill regime – eg twice a day. The patient learns how to use the app – 10 minutes - and given a Pill Connect bottle loaded with pills.
- Patient use -The patient receives a reminder to take a pill via the app at a pre-determined time. The patient responds to the reminder and a pill is dispensed and the data sent to a control centre.
- Side effects – If the patient is unwell or believes that they are suffering from a side effect to the medication they have the option to not take the pill and tell the doctor/ investigator why.
- Non – adherence/not wanting to take pill - If the patient does not respond or has a reason why they can't take the medication, a text or call can be made automatically or manually to prompt adherence or find out the reason for refusal.
- Comprehensive data - The doctor or administrator has comprehensive data on each patients dispensing pattern.
- Safety - The bottle is locked outside the prescribed times to prevent double dosing – particularly common in the elderly.

Elucid is continuing to work closely with The Medication Adherence Expertise Center at the University of Groningen in the Netherlands on further trials as well as trials with the NHS.

The Pill Connect dispenser mechanism and electronics are designed to fit onto a standard pill bottle which is easily filled or refilled by a pharmacist. The capacity of the pill bottle will depend upon the pill size but will have a minimum of thirty pills. The dispensing mechanism can be adjusted to handle pills or capsules of different sizes.

#### About Elucid mHealth

Elucid mHealth is a health technology company based in Manchester, UK developing smart solutions to improve patient care. Pill Connect, Elucid's smart dispensing system which aims to improve and monitor patient adherence, is running a series of clinical trials over the course of the next few months.

US Patent grants: 9,984,213 and 10,224,116

1 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6310871/>

2 [https://www.oecd-ilibrary.org/docserver/8178962c-](https://www.oecd-ilibrary.org/docserver/8178962c-en.pdf?expires=1568713665&id=id&accname=guest&checksum=0FFBBEF4BCDE61F8E8FAE8B25D24CDB8)

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[www.elucid-mhealth.com/index.html](http://www.elucid-mhealth.com/index.html)

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