

## Remote and reliable data - a key to success for pharma studies

By Gill Zahprir, Owlytics CEO

NEWTON, MA, USA, October 22, 2020 /EINPresswire.com/ -- The novel coronavirus sent pharmaceutical companies racing to innovate new treatments and repurpose old ones, as the development of a vaccine continues. At the same time, we're struggling to find effective ways to treat the tsunami of dementia as baby boomers age and longevity increases. All of this is taking place under the new requirements of social distancing.

The challenge is nothing new, but as science grows more exact, the standard for accurate measurements moves higher.

Why do accurate measurements matter?

Scientists can't guess at the amount of medication



to prescribe, the results of the treatment, or if a negative side effect is caused by the drug or is pure coincidence. But the importance of accurate measurements goes even further.

Healthcare systems today are struggling to deliver excellence in public health amid ongoing budget restraints. Accurate measurements are the only way to calculate value for money. They need to verify not just which treatments are effective, but which are the most effective for the most people.

The recent surge in distrust of "Big Pharma" and spike in anti-science conspiracy theorists makes it even more important to deliver transparency in medicine, and that can only be achieved with clear, trustworthy, validated data.

Finally, new trends in personalized medicine demand fast, continuous, and individual measurements that are more sensitive and accurate than broad-scale studies.

Why is it so hard to gather accurate data?

The gold standard for medical (and all research) measurements is that they must be:

•Walid means you're measuring what you think you're measuring, such when you set out to measure disability but you're actually tracking impairment.
•Reliable means tests that are reproducible over time, namely data that is consistent across tests, testers, and subjects.

•Bensitive means that you are able to pick up on even tiny changes in reaction or behavior.



On top of that, you need objective data, which can be difficult to garner. For example, if you're testing antidepressants or pain relief, how do you measure the level of depression or amount of pain? Measuring cognition or stress levels presents similar challenges. You need to remove

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The cornerstones of health measurement are the instruments used to measure the target variables of interest. For these instruments to be fit for purpose they must provide clinically meaningful data." Dr. Cano, of the Clinical Neurology Research Group subjectivity, or at least prevent too much variation in the same patient's answers. You also need to continue to track 'objective' metrics like daily activity as sleep duration and number of wake-ups.

A <u>2011 study</u> found that many health rating scales haven't been psychometrically validated. "The cornerstones of health measurement are the instruments used to measure the target variables of interest. For these instruments to be fit for purpose they must provide clinically useful, meaningful, and interpretable data." said Dr. Cano, of the Clinical Neurology Research Group. Fortunately, AI and cutting-edge wearables could hold the solution.

Al could be pharma's knight in shining armor

Traditional medical monitors are large and non-portable. The patient or study participant has to travel to the machine in a hospital, and is hooked up with lots of wires and sensor pads. Participants interrupt their normal lifestyles and endure invasive observation, making it difficult to be sure that the measurements reflect their true response. This is especially true for sleep studies, since sleep can easily be disrupted by staying in a hospital, connected to a machine.

In contrast, today's AI-powered wearables need nothing more than a fingertip sensor, or can be worn as a watch or insole, to produce measurements that are just as accurate as larger monitors. Because observations are managed remotely, there's no need to disturb the participant's normal behavior by keeping them in a medical center. The technology is non-intrusive, so you can gather the accurate, real-life data you need about their response to new treatments, without wondering if the monitor effected a change in their habits.

More frequent measurements provide a bigger dataset that you can aggregate to find norms. It also enables you to measure the answers against each other to track patterns in how the user feels about their health, instead of comparing them with other users' replies. This is especially relevant for pain relief and mood improvement studies. The more data points you gather, the more accurate your overall conclusion.

As typical monitoring devices are larger and have higher costs which may limit the number of study participants at a given time, AI connected devices are budget friendly and allow for numerous devices to be used at once, enabling quick ramp up of <u>large scale studies</u>.

The larger the dataset, the better you can analyze for trends and overcome anomalies, but you quickly approach the stage where only AI can handle this big data. Algorithms aggregate across large datasets to find personal and group patterns, identify the response, and look for crucial anomalies that may prove or disprove the thesis.

Accurate, personal and remote data is the foundation stone for medical research

Accurate measurements are the foundation of every pharma study and medical research, but it can be tough to gather the objective, gold standard data you need in large enough quantities. Al and connected wearables gather more, higher-quality data, and help medical researchers and drug companies crunch huge datasets to overcome isolated anomalies and find trends.

With better data and more transparency, there's reason to hope that the future of large scale studies will yield better outcomes, ultimately leading to more effective treatments at lower costs.

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Gill started out his career heading the R&D department of the Israeli Air Force, leading the development of advanced technologies. He co-led the Log-On spinout of Guardium's IP and served on the board of Guardium from inception until its acquisition by IBM. Gill is the co-founder of digital Health.il, a leading international forum and conference community. He also served as a BOD member with Medisafe, a mobile medication compliance platform that is a global leader. He holds a B.Sc. in Aeronautical Engineering from the Technion in Haifa; an MBA

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