

## Interview - Beleaguered Purdue puts faith in digital health



[Madeleine Armstrong](#)

Purdue Pharma's previous sales practices have arguably done little to curb the US opioid crisis, but now it hopes to garner some goodwill as it promotes digital health as an answer to the problem. The company says it is working on wearable and other technologies that could combat opioid abuse – an effort that could be seen as closing the stable door after the horse has bolted.

Around 78 people die per day in the US from an opioid-related overdose, [says the US Department of Health & Human Services](#). And while a step in the right direction, it seems unlikely that digital health advances alone could reverse the explosion in opioid use that has been building for years. Nevertheless, Tracy Mayne, head of medical affairs and strategic research at Purdue, tells *EP Vantage* that the company is looking into technologies that could address both abuse by patients and illicit diversion to those not prescribed the drugs.

"There are smart bottles with thumb prints on top, so only the person prescribed the medication can open it," he says, a measure that could hamper diversion.

To help prevent overdoses among existing patients, smart bottles can also measure the amount of drug inside and lock if necessary. "Let's say the person opened the pill bottle three times, the bottle can lock and not let them take the medication again for X amount of time," Mr Mayne says.

### Wearables

However, although these technologies are "on the radar", they are not the immediate priority for Purdue. Instead, the company first plans to study whether a wearable health technology – the Apple Watch to be precise – can improve outcomes.

The study, a collaboration with an unnamed partner in the integrated health sphere, should enrol 200-240 patients and begin around the end of March next year, with interim data in 2018 and full results in 2019, Mr Mayne says.

One primary endpoint is a decrease in overall opioid use, while others include pain and functionality – both self-reported and evaluated using objective measures such as the number of steps taken. The study will also look at psychosocial measures like depression and anxiety, and overall healthcare resource utilisation.

"The bottom line is, is the patient feeling and functioning better and then, can we do that at the same time as reducing the costs to the healthcare system?" Mr Mayne says.

When asked how monitoring could improve these outcomes, he replies: "Wearable health technologies are two-way data transfers – it's not just getting data from the patient."

For example, patients can be prompted to move around at regular intervals or to take their medication on time. "I think this will both increase adherence and decrease overall pain medications, because by increasing adherence my theory is, and I hope it's borne out, they need less rescue medication."

He concludes: "If this proof of concept goes well, this absolutely has the potential to become a new direction for Purdue."

### Smarty pants

Purdue is using the Apple Watch initially because it is "a good out-of-the-box way to do a proof of concept". But the company is also looking at other monitoring technologies, and Mr Mayne says: "We've identified what we think will be the next stage of development – wearable garments with multiple sensors."

These could measure levels of compounds in the sweat – and by extension in the blood – to assess compliance, among other things. In the case of opioids, this could be another way of identifying those who have missed doses and could be diverting their drugs.

Mr Mayne envisages a future where everybody wears these smart undergarments – when asked about the expense he replies that the cost of a smart T shirt could go from \$400 now to \$50 in the near future.

However, it could be argued that people trapped in the wage poverty that has contributed to the opioid problem are unlikely to be able to afford this. He points out that some insurers are coming around to the value of remote monitoring, and that Aetna recently announced that it would subsidise the Apple Watch for certain patients.

As for what healthcare providers might be willing to pay for, he concedes: “I think one starts always with more serious diseases – everything from chronic pain, to kidney disease, to post-myocardial infarction, where it would be well worth investing that money towards monitoring.”

It cannot be denied that the opioid epidemic is a serious problem. Digital health might be part of the solution – but is unlikely to solve this issue alone.

To contact the writer of this story email Madeleine Armstrong in London at [madeleinea@epvantage.com](mailto:madeleinea@epvantage.com) or follow [@ByMadeleineA](https://twitter.com/ByMadeleineA) on Twitter

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