

Smart pills dumb down medical care, experts warn

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Eric Swirsky. Credit: UIC

Enthusiasm for an emerging digital health tool, the smart pill, is on the rise but researchers at the University of Illinois at Chicago have published a paper in the *American Journal of Bioethics* that cautions health care providers and policymakers to slow down when it comes to allowing this technology in patient care settings.

Smart pills, or digital pills, are prescription medications equipped with edible electronic sensors that send wireless messages to devices, like patches and smartphones or tablets, outside the body when they are ingested. The first of its kind, which is used to treat [patients](#) with schizophrenia, bipolar disorder and major depressive disorder, was [approved](#) for use in humans by the U.S. Food and Drug Administration in 2017.

Some hope the technology will help patients and doctors track drug regimen compliance and increase patient adherence, which estimates show may save between \$100 and \$300 billion annually in the U.S. Others have concerns about patient privacy, consent and data sharing.

Eric Swirsky, an expert in the legal and ethical issues related to [health care](#) technology, says that both groups have valid arguments but that neither is asking the right question.

"We need to know if smart pills are going to actually improve patients' lives, which is much more complicated than compliance or privacy," said Swirsky, clinical associate professor of biomedical and health information sciences in the UIC College of Applied Health Sciences. "It is naive to think that this type of surveilled compliance with provider-recommended drug treatments will function like a [magic pill](#). More likely, it will just challenge the ingenuity of patients."

Swirsky said there is simply no evidence yet to suggest smart pills benefit patients and that using the technology outside of clinical trials "flies in the face of the research we do currently have, which shows that patients benefit by receiving care from providers who can manage the many issues around adherence."

"Smart pills are a dangerous reduction of the provider-patient relationship and there is no shortcut to improving [patient adherence](#),

which happens in a larger framework of home, work and clinical environments, not to mention perceptions and emotions," Swirsky said. "This technology dumbs down an issue that is often very complex in the hopes of quickly solving an expensive medical challenge."

For example, the first FDA-approved smart [pill](#) is being used in patients with schizophrenia, who often suffer from paranoia about being surveilled and distrust of medication or care providers. Swirsky said the intent to improve medication adherence in this group of patients is understandable, given that many patients see remarkable benefits from consistent medication use, but it is arguably unethical considering their unique symptoms and vulnerabilities.

The researchers warn that smart pills should be evaluated based on their clinical efficacy against the standard of care drugs, like any other intervention, not based only on compliance or cost savings.

Swirsky co-authored the paper with his UIC colleague Andrew Boyd, who says that when it comes to [health information technology](#), "we need to think about the long game."

"It's not just about return on investment—it's about using technology and data in a way that changes lives for the better," said Boyd, associate professor of biomedical and health information sciences in the UIC College of Applied Health Sciences. "There is nothing more personal than our health, and as [health](#) care strives for high-tech innovation, we cannot do it at the expense of trust between provider and patient."

Use of this type of data-based technology, Boyd said, should also not outpace public policy and legislation in properly regulating how this data is shared, used or purchased by companies.

"Health information technology functions best when implemented in

conjunction with doctors and patients in a collaborative manner," the researchers write. "With no magic pill to cure the ills of the modern doctor-patient relationship, patients would be better served by providers who seek a comprehensive understanding of adherence than those who employ [technology](#) they do not understand."

More information: Eric S. Swirsky et al, Adherence, Surveillance, and Technological Hubris, *The American Journal of Bioethics* (2018). [DOI: 10.1080/15265161.2018.1498953](https://doi.org/10.1080/15265161.2018.1498953)

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