

## Using blockchain technology to recycle cancer drugs

Two startup organisations that are committed to recycling expensive cancer drugs for re-use have been chosen by the US Food and Drug Administration (FDA) to form part of a consortium for a drug supply chain pilot project.

Following the enactment of the Drug Quality and Security Act in 2013, the FDA announced plans to launch a pilot programme intending to develop technologies for identifying and tracing prescription drugs, to enhance the safety and security of the drug supply chain.

RemediChain and Good Shepherd Pharmacy (both in Memphis, TN, USA) take unused cancer drugs and give them to patients who otherwise cannot afford them. The unused drugs are donated by cancer clinics and individuals no longer in need of them and are given to suitable patients in need across the USA.

A stigma is associated with using donated medication because of its unknown nature, since once the drug has left the pharmacy there is no way to track it. RemediChain and Good Shepherd Pharmacy both use blockchain technology to track medicine transfers in the drug supply chain by recreating missing information, such as where the drug was manufactured and the expiration date, to validate the legitimacy of the medication.

There is a huge demand for costly cancer drugs, and the high mortality from cancer means that leftover drugs are often simply disposed of. These factors all support the suitability of cancer medication for recycling, as well as the benefits with regards to health outcomes and the environment.

Jim Armitage University of Nebraska Medical Center (Omaha, NE, USA) believes that “this is a new and

innovative approach to address the burden that the high cost of cancer drugs is placing on some patients. It may or may not work, but it is worth trying.”

The FDA’s consortium also consists of several other organisations, including blockchain company Rymedi (Raleigh, NC, USA), Indiana University Health (Indianapolis, IN, USA), WakeMed Hospitals (Raleigh, NC, USA), Temptime/Zebra Technologies (Lincolnshire, IL, USA), the Center for Supply Chain Studies (Newtown, PA, USA), and the Global Health Policy Institute (San Diego, CA, USA). The results from the pilot programme will be used to develop an electronic track-and-trace system, which is set to come into effect in 2023 as part of the Drug Supply Chain Security Act.

*Saffya Benniche*



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For more on the **cancer drug recycling organisations chosen for the FDA pilot** see [https://www.medscape.com/viewarticle/912383#vp\\_1](https://www.medscape.com/viewarticle/912383#vp_1)

For more on the **FDA’s pilot programme** see <https://www.fda.gov/news-events/press-announcements/fda-takes-new-steps-adopt-more-modern-technologies-improving-security-drug-supply-chain-through>