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Verndari Inc., with offices at UC Davis Medical Center, receives patent

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Verndari Inc., a pharmaceutical company with laboratories at the UC Davis Medical Center, has received a patent for vaccines administered through adhesive skin patches.

The technology, known as VaxiPatch, can be self-applied and is painless to the user, unlike typical vaccines that require a needle and syringe. The patent was issued to the company on July 17 and describes a method to manufacture the vaccine patches.

While the pharmaceutical industry has continued to develop vaccines for the prevention of a wider range of diseases, innovations in actual vaccine administration have remained somewhat stagnant over the last 70 years, said Dr. D.R. Henderson, CEO of Verndari.



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UC Davis Medical Center in Sacramento*

In addition to skin patches, syringe-free inventions for vaccines include jet injectors, which use high pressure to push a stream of liquid into the skin, and nasal sprays. The Centers for Disease Control and Prevention advised against a nasal-spray-administered flu vaccine in 2016, citing data showing that it was ineffective.

The VaxiPatch contains “microneedles” which rest on the skin for 10 minutes and are too small to cause pain for the vaccine recipient. Additionally, the vaccine patches are stable at room temperature, so they don’t require refrigeration

Verndari's goal with the design is to "substantially lower the cost of vaccines by eliminating the need for a hypodermic needle, eliminating the need for highly paid medical professionals to administer a vaccine and by eliminating dependence on the cold chain," according to the company's [website](#).

The skin patch technology currently works with the hepatitis B vaccine and three types of influenza vaccines, Henderson said via email. Verndari is focusing on developing vaccines for the flu vaccine development and is meeting with the Food and Drug Administration next month about clinical development, he said.

Eliminating the need for a needle and syringe could increase the number of people who choose to get vaccinated. A 2012 [study](#) in Toronto found that 24 percent of adults and 63 percent of children reported a fear of needles. The skin patch could make getting vaccinated less daunting for these populations.

Now that the patent has been issued, the company's next step is to "raise money and start clinical trials," Henderson said.

Verndari has raised about \$2.7 million through a bridge loan and has started efforts to raise \$15 million through a series A venture capital round with Young & Partners LLC, a life sciences and chemical investment bank based in New York, Henderson said.

Verndari is headquartered in Napa, but its research and development and lab work are conducted in at UC Davis Medical Center.

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