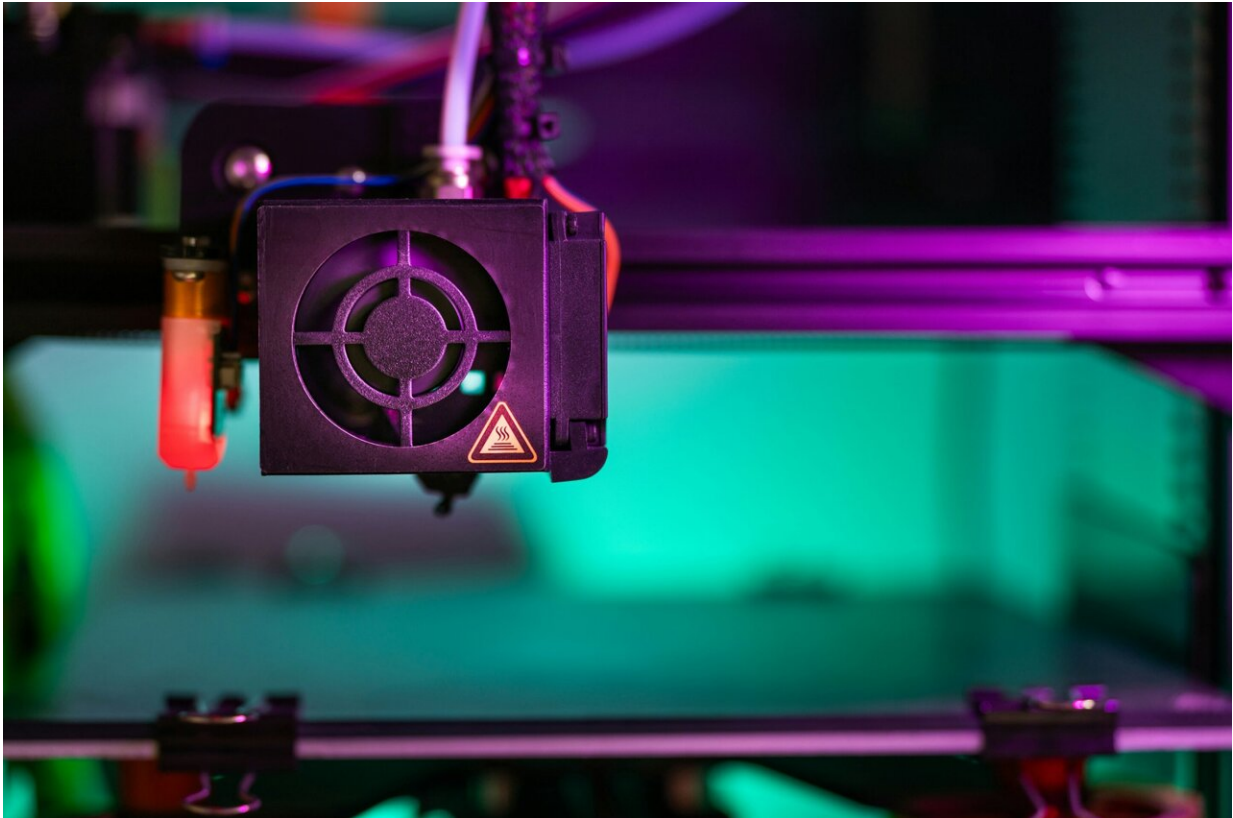


A step toward additive health care

August 12 2024, by David Bradley



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New research has looked at how additive manufacturing, colloquially referred to as "3D printing," is changing health care. This transformative technology, long associated with advances in traditional manufacturing, is increasingly being recognized for its capacity to produce highly customized, patient-specific medical models.

Such models can be used in surgical planning, training, and the production of custom prosthetics and other [medical devices](#).

However, despite its promise, Ethan Sanekane, Jill Speece, Mohamed Awwad, and Xuan Wang of California Polytechnic State University in Obispo and Sara Moghtadernejad California State University Long Beach, California, U.S., suggest in their article, [published](#) in the *International Journal of Healthcare Technology and Management*, that access to this technology in health care is rather limited. There is an information gap that the current research seeks to fill.

Additive manufacturing, as the name suggests, involves the creation of objects by adding material layer by layer. This approach, pioneered in the 1980s, but having come to the fore in many areas in the last couple of decades, can be used to produce highly complex and detailed structures that would be beyond [economic viability](#) in conventional manufacturing.

In health care, this technology enables the creation of models that might be an exact replica of a patient's anatomy, for instance. Surgeons could, for example, then use such a model of a disease site to plan a sophisticated procedure with unprecedented precision. Such a model might be even more useful with [robotic surgery](#), where the model could be used to train the robot with no risk to the patient.

The same technology could be used to craft bespoke orthotics and prosthetics that are precisely tailored to the patient's unique needs, rather than being off-the shelf components that might be cut to fit, as it were.

The research has taken an important step forward in identifying the full potential of additive manufacturing in health care. By addressing the barriers to access and strategically locating [additive manufacturing](#) hubs, the researchers have perhaps paved the way for greater adoption of this

transformative [technology](#).

More information: Ethan Sanekane et al, Healthcare industry input parameters for a deterministic model that optimally locates additive manufacturing hubs, *International Journal of Healthcare Technology and Management* (2024). [DOI: 10.1504/IJHTM.2024.140392](https://doi.org/10.1504/IJHTM.2024.140392)

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