

What if blood transfusions were privatized tomorrow?



SCENARIO

It is the year 2044. Many transhumanist pioneers have emerged over the past 20 years, waging a war against aging and experimenting with ways to stay youthful forever. While the movement was initially confined to the US, it eventually conquered northern Europe, inspiring followers across the continent. Whether seeking to improve physical performance; enjoy an improved health span or even eternal youth, the "blood consumer" movement has now spread and taken root across the globe, although cultural interpretations exist they all share a common thread. These consumers consider blood and its derivatives as products or services designed to improve their lives, or even prolong them.

FROM MYTH TO MARKET: THE EMERGENCE OF A NEW RELATIONSHIP WITH BLOOD

What was initially limited to a few niche practices, such as vitamin therapy or parabiosis, these trends have paved the way for an unprecedented commodification of blood. Inspired by the growing monetization of stem cells from umbilical cord blood, certain markets, such as plasma, have attracted significant private investment. Despite opposition and debate surrounding the ethical concerns, the taboo has gradually faded, giving way to a structured and thriving industry. These days, you would struggle to find an elite athlete who doesn't use blood with a higher concentration of red blood cells or genetically modified blood to optimize their performance.

THE TRIUMPH OF "TAILOR-MADE" BLOOD

This cultural and ethical change has been fueled by mass marketing campaigns surfing on the wave of the quantified self. The use of a personal "health score" has seen a rise in popularity, making it a new social norm. As such, hyper-personalized medicine is standard practice, offering patients the possibility to auto-transfuse their own optimized blood or optimized blood from a family member, to use their own cells for treatment, or to choose blood specifically prepared in a high-end laboratory. Lauded by influencers addressing broad and diverse audiences, an unprecedented craze for youth-giving young blood transfusions now dictates supply and demand.

FROM MEDICAL INNOVATION TO LUXURIOUS INDULGENCE

While some see this as a democratization of blood and its uses, others believe this liberalization primarily benefits the elite. As a prime marketing target, the needs and desires of the ultra-rich have frequently been placed at the center of this new branch of luxury healthcare. Consequently, blood is no longer used for traditional therapeutic purposes, instead it has become a much sought-after commercial product, at the crossroads of aesthetics and esotericism. Luxury cosmetics incorporate plasma into their ingredients, specialized clinics offer platelet-rich plasma (PRP) treatments for all types of imperfections, and some unscrupulous celebrities sell samples of their blood at eye-watering prices. It is a thin line between innovation and indulgence, and debate is raging among ethics committees.

INTERVIEW

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Is there scientific evidence showing that blood transfusion could help with performance or rejuvenation?

c. g. There have indeed been some scientific experiments, especially in mice, showing that the blood from younger mice can rejuvenate older mice. However, these experiments have relied on stem cells, not on blood. Even though stem cells can be found in blood, you can also source them elsewhere, and much more efficiently.

Fat cells, for example, are very abundant in stem cells, so it would be much more effective to use those instead, which can be generated from any kind of aesthetic operation. For instance, if a young woman undergoes liposuction, then you can generate a lot of fat stem cells from the fat which has been removed. You can then experiment with these cells.

The idea that old people can get blood transfused from younger people to rejuvenate and get healthier may be a great tool for fiction, but it isn't a very effective method in real life.

Are monetization and the creation of new business models around healthcare compatible with a public healthcare system?

c. g. On the one hand, we see that public

healthcare systems have to deal with growing levels of inefficiency, mostly because the population is ageing, these systems are too centralized, and there are parallel structures competing with hospitals for patient care.

On the other hand, a totally private system like in the US is so expensive that it's not affordable for everyone. I think that in the future we will come up with a dual system where you have immediate and basic healthcare financed by public spendings, a bare-bones healthcare system which everybody can use anytime when they need urgent care. However, additional features, like monitoring your healthcare over time, will be available through private vendors.

Do you feel like the emergence of personal health scores, as highlighted in the scenario, is the next step of the quantified self trend that is already appearing in the age of wearables and personalized medicine?

c. g. I actually think that it will be one of the focuses of future transfusion systems. Let's say that you have a healthcare system which is partially privatized and where you don't get everything from your national healthcare system. Then, people will be aware that they have to keep a healthy life, and need more and more data to do so. What if, for instance, you don't have to go to the doctor and ask them to measure your cholesterol once a year, but could instead get this information directly from your blood donations and/or transfusions?

And then, the people who do the blood transfusion give you some personalized advice based on artificial intelligence, saying for example that you need to lose a certain amount of weight and follow this diet if you want your cholesterol level to get back to a healthy level. You could also monitor hypertension, diabetes, cholesterol, maybe osteoporosis, it can all be seen in the blood.

I think it would be very interesting to have a connection of data collected from the

blood itself during the blood donation, as well as physiological data, which you can also then use for the blood transfusion itself, because you can then decide, based on some relevant physiological parameters, how long the blood can be kept. Because we know that if you have a high cholesterol level, then the blood can't be kept more than 45 days. So yes, I feel like blood collectors will play a key role in helping us monitor our own health in the future.

What do you think of the current debates that many countries are having over paying people to give their blood, which could be a first step toward a future commodification of blood? Is this the right path to take?

c. g. I would draw a difference between blood and plasma donation. For plasma, you can donate up to 50 times a year, and take a lot at one time, about 700 milliliters, because plasma regenerates very quickly taking about two days only to regenerate. You can have one person donating frequently, and have an interest in making them come back again, as there's not enough plasma donors. Remuneration thus makes sense.

When it comes to blood, however, you can't draw too much blood at once, for physiological reasons, nor do it too often, as it takes longer to regenerate. We know that blood donation may cause harm for blood donors, especially if done very frequently. For instance, you can get iron deficiency, or anaemia. So instead of having a small amount of regular donors, what you need is a huge pool of donors.

In the case of blood, you can also get people to donate for healthcare reasons, by showing them that they can immediately save lives by doing so. That's different in plasma donation, which is often used for pharmaceutical products, which is not urgently life-saving.

That's why I think that remunerative models make sense for plasma donations, but not for blood. That's why in Europe, many countries have by law forbidden remuneration for blood donation, whilst allowing remuneration for plasma donations.



"Blood Market Boom: Personalized Plasma Now Worth More Than Gold"

Boomborg

"From Therapy to Commodity: How Blood Became the Next Big Asset Class"

The Fiducial Times

"Genetically Enhanced Blood: New Results in Human Optimization?"

The Hall Street Journal

"Blood Donation or Blood Investment? The Rise of the Health Score Economy"

The Warden

"'Vampire Beauty': How Luxury Skincare has Evolved"

Fogue