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**Blood: An Epic History of Medicine and Commerce**

Sreedhar Krishna, Medical Student, Faculty of Medicine, Imperial College London [skk04@imperial.ac.uk](mailto:skk04@imperial.ac.uk)

**Abstract**

This short review examines Douglas Starr's impressively titled, "Blood: An Epic History of Medicine and Commerce." Starr, an associate professor of journalism at Boston University, introduces his topic by recounting disastrous early experiments on blood. Shifting through the gears admirably, he discusses all the key milestones in the history of blood without rendering the text overly dense. As the title suggests, blood is considered a commodity. Reading the book provokes many dilemmas, not least whether blood should be attributed monetary value. Starr, however, leaves such judgment up to the reader. It is highly recommended.

Douglas Starr. *Blood: An Epic History of Medicine and Commerce*.

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Blood is everywhere. Not only does it course through us, hold economic value, have great allegorical meaning, but is also the topic of this literary gem by Starr. *Blood: An Epic History of Medicine and Commerce* traces the oft-confusing passage of this life-saving fluid through the centuries, focusing primarily on the 20<sup>th</sup> century.

Starr, an associate professor of journalism and co-director of the graduate program in science journalism at Boston University, honours his students, colleagues and readers by providing an unbiased and compelling account. Starr recounts disastrous early experimentation with blood, such as the attempt to transfuse "blood from a gentle calf" to cure the 'vigorous' nature of a French madman. Starr shifts through the gears admirably, as he skilfully weaves together the key milestones in blood history – the discovery of the anticoagulant properties of blood by Lewisohn, the conception of the blood bank, the key strategic advantage conferred by the Allies' blood policy in the World Wars and most authoritatively, the outbreak of HIV. Starr has managed to integrate these disparate events separated by time, geography and context into one hugely enjoyable, epic text.

This is, however, primarily a book discussing blood as a commodity, and as such, probes more deeply into the sometimes murky business practices underpinning this multibillion-dollar industry. While business, by nature, is driven by projections, plans and profit, Starr questions the very idea of trading blood. He draws analogies between vulnerable and deprived communities donating blood for money, or "ooze-for-booze" as he puts it, and the trade of human organs. In doing so, he poses some very uncomfortable questions, but in keeping with his unbiased account, leaves moral and ethical judgments firmly in the reader's hands.

The main tale of commerce, through which Starr guides us, is presented in a logical fashion. The noble, scholarly nature of blood research was quickly infected with profit-driven ethos that financial interest undeniably brings. The recognition of blood as valuable commodity and the international trade in blood encompassing San Francisco to dictatorships such as Nicaragua are recounted with poise and literary wit. Blood and blood products now save many thousands of lives every year. There is no question that blood technology is a great gift to mankind, and that we owe the scientists, doctors, engineers, and even the businessmen who have helped create it tremendous gratitude. As Starr's story shows, the history of blood transfusion has been at times ugly and frightening.

Blood, is as potentially hazardous as it is life-saving. In the US, Europe and Japan, organizations were seemingly oblivious to the danger of blood transmitted infections, despite the grave warning provided by hepatitis. Thus, the HIV epidemic was born. Starr describes how 40,000 hemophiliacs were infected, utilising individual sufferers' personal accounts to elucidate the order of magnitude of this tragedy. Many of these cases could not have been avoided. AIDS has a long incubation period, and when the first cases of the disease started turning up in the early 1980s, no one knew where it came from or how serious the epidemic would turn out to be. By that time, many people had already been infected. However, by early 1983, once the disease had been identified and demonstrated to be transmissible through blood, every blood bank in the world should have been on red alert.

Despite the absence of a definitive HIV test at the time, there were other ways of protecting the blood supply. People who have a high risk of hepatitis infection also tend to have a high risk of contracting HIV. As a result screening for hepatitis, for which there was a test, might have helped prevent the transmission of both diseases through the blood supply. Additionally the avoidance of donations from the groups in which most AIDS cases were then occurring, such as homosexual men, intravenous drug users, and prisoners, as well as from anyone who sold blood for money would also have been a wiser course of action. Unfortunately, these indications were ignored with the terrible economic, social and health consequences that we suffer today. Nearly all institutions that could have done something, such as blood banks, hospitals, and even hemophilia societies, were complacent and stubborn, and some were much worse than this: The financial interests of those in the blood business meant that this information was to be ignored, or even suppressed – at obviously great human cost. Thousands of people were needlessly infected and died.

The Japanese case illustrates just how money and institutional inertia catalysed the spread of HIV in hemophiliacs. By the spring of 1983, the American company Hyland developed a technique to make clotting factors safe from hepatitis, no matter where they came from, by a combination of heat- and chemical-treatment. The HIV virus had not yet been discovered, but by this time it was widely predicted that a virus like hepatitis would turn out to be the cause of AIDS, in which case heat treatment would almost certainly eliminate it as well. The Japanese Green Cross could have begun importing this safer material in mid-1983. Instead the Japanese waited two years, during which time they continued to import dangerous, untreated clotting factors that caused nearly two thousand extra AIDS cases among Japanese hemophiliacs. Batches of untreated clotting factors were still being sold in 1987. The problem seemed to lie partly with Japanese national pride. “The ‘not invented here’ syndrome existed in Green Cross to the *n*th degree,” said an American scientist who had helped develop the heat-treatment process. It was not until the Japanese had developed and licensed their own heat-treatment technology that they agreed also to license the American version. This impeding force provided by national pride to sensible, successful management of the HIV epidemic is a recurring theme in this book.

The list of countries and institutions that could have done better to protect people from HIV in the blood supply is regrettably long. The French authorities nominally relied on ‘voluntary’ blood donations from the public, although the coercion of reduced prison terms for donors casts doubts on this. Even after blood product-related HIV cases were detected in France, the National Centre for Blood Transfusion, like their colleagues in Japan, resisted providing safer, heat-treated clotting factors to hemophiliacs for much the same reasons as the Japanese. Similarly after an American company developed an HIV test that could be used for screening blood, both the French and the British postponed registering it until their own scientists had developed French and British blood tests which could be marketed instead.

Meanwhile, in both nations, unsafe blood continued to be transfused to patients. In Britain, there had long been a campaign to avoid using blood products from America, which even in the late 1970s were already considered suspect. Hospitals did collect enough blood from well-screened British volunteers for the nation to enable self-sufficiency. To process the blood into usable components such as clotting factors and gamma globulins, the work at Britain’s largest and state-owned processing plant would have had to be stepped up. That in turn would have meant negotiating with the unions, something Margaret Thatcher was not prepared to do.

Starr’s account, while surprisingly insightful and occupying a literary niche, is not without its flaws. Scientifically-inclined readers may desire to know the reasons for blood incompatibility reactions occurring between animal-to-man transfusions, but this is not answered. Moreover, much of the science presented in the book is flawed, such as the little immunohematology the author does present. Additionally, Starr seems almost too forgiving a judge of character. For example, Starr tells us about the Japanese transfusion doctor, Ryoichi Naito, who was responsible for some of the worst atrocities of the War. Notably, Naito used prisoners as well as civilian women and children as guinea pigs on which he tested flame-throwers and dissected his subjects – whether or not they were alive. Whether such a man can ever be reformed is debatable, but Starr seems almost too ready to christen the Naito who emerged from war as “a humble, devoted, and honorable doctor, bicycling from one patient to another in the small village where he settled.” But, these are minor gripes, since the book covers its bread-and-butter comprehensively.

All in all, *Blood* is a rare book, traversing between the depths of Nazi depravity to the peak of man’s intellectual capacity for technological advance in one giant step. It is highly recommended.