

**Title:** Antibiotics: a double-edged sword

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**1349**

Another X on a door.

The sky lightens, the sun's rays barely making it past the grey clouds blanketing the sky. Watching the bodies hauled out of houses and onto carts, I wish it could have been different.

More than half the city was already dead, and more were dying. Almost every day, the streets seemed a little emptier. It was a miracle I hadn't caught the disease myself yet.

The courier boy wasn't the same boy from yesterday. Without even thinking, I knew why. He handed me a few letters and hurried on. I watched him for a while. He would stop at a house, see the X on the door, then throw the letters outside and continue, without even bothering to knock. Chances were the inhabitants were dead anyway.

I opened the letters. They were all messages from family and friends in other parts of the country, writing to tell me of the first victims of the Black Death in their town, and urging me to reply at once if I was still alive.

I sighed. I had lost so many over these few years, more than I had ever dared to imagine. The priests tried to seek divine intervention, but nothing came from above to stall the disease. The healers tried every remedy in their books, but nothing worked. Everyone died all the same. Most of the time, the healers themselves died too. Nothing was working.

If only there was something we could do. Something to cure a person instantly of the crippling plague. More than just ridiculous remedies and desperate prayers. How many lives could that have saved? Perhaps we would never know.

**1944**

My son walked in through the front door, holding a piece of paper. He had a smile on his face.

"Not nervous about the conscription?" I asked. He smiled. "Dad, Jackson from a few blocks down just came back from the frontline today. And in one piece."

Now this was interesting. As far as I knew, conscripted soldiers rarely came back alive. I looked him up and down for a moment. "You're not drunk, are you boy?"

"I'm as sober as I can be, Dad. I saw him flesh and blood today. He even gave me this." My son hands the piece of paper to me. It was a little leaflet. Propaganda, of course, but at least it was from our side.

“Penicillin – the soldier’s best friend!” it read, in cheesy block letters. The leaflet spoke of a medical miracle that had just been invented by Allied scientists – a brand new drug, created from a fungus, that could cure just about any infection.

I looked back at my son. “You really believe this?” The son smiled again. “I do. Jackson was just telling me – whenever someone got injured, they would have him take a pill or two to prevent infection, and he would recover nicely. No infections, no blood poisoning, nothing!”

I remembered my time on the frontline in World War I. More people died of infections than of gunshot wounds. It was heartbreaking to watch my friends die futilely from infections and diseases, rather than from battle wounds.

I looked at the leaflet again. The past few days, my son had been miserable about his conscription. Today, he was shaking with excitement. I myself had never seen such an amazing invention; it was almost too good to be true.

With leaflets like these, it was often necessary to take them with a pinch of salt. But this one seemed so real. Jackson had just given us a first-hand account of its abilities. Could this miracle really have come true?

I smiled to my son. “Well, son. Looks like you got lucky. All the best on the battlefield, and don’t die.” My son smiled back. “It just became a lot harder to die, Dad.”

## **2079**

Another house empty and locked.

The streets are increasingly devoid of people. Most of the shops were empty and closed. The grocer had disappeared yesterday, leaving only an automated system to tend the store.

I glance into the houses I pass, hastily locked and sealed, as though time had stopped inside. In one of them, the TV was still playing. In another, toys were strewn about, left unpacked by its missing owners.

Most people in this town are dead, thanks to pneumonia and a dozen other multidrug-resistant bacterial infections. The precious few still alive cower in their homes, afraid to catch an infection from the sickly air. Everyone else is under quarantine.

In the distance, a massive building looms. Initially set up as a temporary hospital, it is now a quarantine center. Thousands of sick lie within, under lock and key.

I can only imagine what it is like inside. A prison, perhaps. Every sick person separated, even from their closest relatives, unable to speak with anyone else, fed medications day in and day out.

No one wants to admit it, but everyone knows how it came to this.

The warning signs came early enough. Soon after the discovery of antibiotics, its use had spread like wildfire across the world. Everyone was using antibiotics—if someone fell sick, no matter how trivial the illness was, they would simply go to the doctor, get some antibiotics, and recover quickly. Many doctors indiscriminately provided antibiotics, without making sure that it was necessary. Gradually, bacteria recognized the deadly weapons of humanity, and how to avoid them.

But the doctors were not the largest culprits. The farmers were. Antibiotics were added into animal feed as a cheap and dirty way to keep them healthy. They disregarded the possibility of resistance, and force-fed the animals antibiotics. It worked, for a while. Soon after, bacteria gained resistance to any and every antibiotic.

Scientists struggled to find new antibiotics, or different ways to stop the inevitable spread of bacteria. But in the end, humanity lost the arms race. The world became much like the old times before antibiotics. People began to die of trivial illnesses, previously curable by a few pills. It became much like the old days. Some prayed for divine intervention. Others turned to ancient remedies, hoping that they would work.

But it was already too late. The damage had been done by our predecessors, and could not be reversed. No matter what we tried, people kept dying. Dozens of diseases jumped around the world, killing people by the droves. All because over a century ago, we had failed to notice that antibiotics were a double-edged sword.

## **Short caption**

I wrote this essay to illustrate the cruel reality of antibiotics: though effective in the short term, they tend to lose their effectiveness in the long term, leaving humanity open once again to the threat of bacterial infections. Our predecessors have long wished for a cure for every disease. It was given to us in the form of antibiotics. We have used and abused antibiotics for years, and if we do not stop, our successors will pay the price.