

Revenge of the Bugs



AMITAVA KAR

ANTIBIOTIC resistance is the new bacterial normal. About a hundred years ago with the discovery of penicillin, the antibiotic revolution commenced the era of modern medicine. Yet cloaked in penicillin's serendipitous beginning were signs of a

catastrophe. "It's Newton meets Darwin," according to Michael Gilmore, Professor of Ophthalmology at Harvard Medical School and director of the Harvard-wide Program on Antibiotic Resistance. "For every biological action, there's an equal and opposite reaction."

Many think we face the risks of returning to the 19th century when germs ruled over humans. Physicians may run out of treatment options altogether. Regular operations could become deadly minus the ability to kill harmful bacteria. Minor infections could become life-threatening conditions. Pneumonia could be more and more difficult to treat.

It's already causing collateral damage. About 50,000 lives are lost annually to antibiotic-resistant infections in the US and Europe alone. Globally as many as 700,000 people die of drug resistance in illnesses caused by bacterial infections. If the resistance continues at the current rate, 10 million people will die each year by 2050.

Drug resistance is common in all microorganisms but resistance works differently in bacteria: their resistance can be transferred. They can exchange small, circular pieces of DNA called Plasmids, which carry genes for resistance. Most genetic material is transmitted only from parent to offspring, but plasmids can be transferred from neighbour to neighbour. This unique ability makes bacteria an even greater threat.

This defiance has followed hard on the heels of each miracle antibiotic. For example, penicillin-resistant staphylococcus was already being seen in labs in 1940, a few years before mass-produced penicillin was introduced. Tetracycline, a most important medication needed in a basic health care system, was introduced in 1950, and resistant shigella was identified in the same decade. "It is a classic example of use and adaptation—use by humans for their cure and adaptation by bacteria for their survival. It is the true biological warfare," says Dr Zia Uddin Ahmed, former Professor of Microbiology at Jahangirnagar University and author of Genetics of Antibiotic Resistance (2007).

We have only ourselves to blame. An astonishingly high percentage of antibiotic use in humans is estimated to be unnecessary.

Antibiotics are often prescribed needlessly for ailments like the common cold and the flu, which are not even caused by bacteria, but by viruses. For instance, in the United States, antibiotics are prescribed 70 percent of the time even though medical guidelines state that they are never needed for acute bronchitis.

According to a 2014 study by Dhaka Shishu Hospital, 72 percent of the children admitted at the hospital were given at least one antibiotic, while 51 percent received several.

Over-prescription has complex roots. Patients are often confused about how long symptoms last, even though a couple of weeks

commonly used as fertilisers. Farmers and workers in slaughterhouses may also come in contact with the bacteria.

Taxing the inappropriate use of antibiotics in agriculture and then using the proceeds to subsidise vaccination can be a good start. The strategy has worked in Denmark which introduced targets to limit the use of antibiotics and, contrary to the agricultural lobbyists' warnings, Danish food productivity increased.

The underlying issue is a "classic market failure problem" that requires intervention from governments in the form of regulation, subsidy and taxation. On the supply side,



are normal for a cold, a month for a cough. Doctors, on the other hand, may prescribe antibiotics in hope of avoiding confrontation with a patient. "In our country, there is a serious lack of awareness among doctors and patients about this issue. They prescribe antibiotics without any regulation. And antibiotics are sold over the counter indiscriminately," Dr. Ahmed says.

The practice of over-prescription of antibiotics benefits both pharmaceutical and agricultural industries. The bulk of the antibiotic use today takes place on livestock. How does that pose a risk to humans? There are several ways. The genes that produce resistance to antibiotics can be easily transferred between bacterial species. Humans can come in contact with them through consumption of undercooked meat or other food products. Manure from antibiotics fed animals is

pharmaceutical companies should be incentivised to commit resources for new antimicrobial drugs. Better, faster diagnostic tools should be developed for physicians. And practitioners should be prohibited from prescribing antibiotics to patients unless they have carried out a test that shows the drug is being targeted correctly.

Experts argue rational use of antibiotics is the answer. But what if practitioners do not have adequate knowledge of the mechanism of functions of antibiotics at the molecular level? It has to be part of the curricula at universities and medical colleges. And we need to communicate to seven billion humans around the world that yes, antibiotics are fantastic but only if correctly used.

Nature developed resistance in the bacterium perhaps to teach scientists a little humility.

The writer is a member of the editorial team at The Daily Star.

TRIBUTE TO NURJAHAN BEGUM

THE TORCHBEARER of change

SABIT FARIZMA IFTIKHAR

A crowd of camera lights flashed simultaneously as I entered the hospital, unaware the news which would devastate my life forever. I ran haphazardly, stumbling over the stairs, corridors, lift, and ran into my relatives at the hospital floor. Their eyes were cast downwards, and I knew through the look on their face that she was no more. When I entered the Intensive Care Unit with my sister, I saw her lying body, eyes shut, all the machines disconnected; peaceful, beautiful as always. My loving grandmother was gone in the land of no return.

A trailblazer who enlightened the society on the importance of women's education, Nurjahan Begum breathed her last on May 23, 2016. I have been extremely privileged to be her granddaughter, to have shared so many beautiful memories together in this lifetime. On the eve of her 92nd birth anniversary, I present a personal tribute to honour this legend.

Born on June 4, 1925 to renowned journalist Md Nasiruddin and Fatema Begum, Nurjahan Begum is the first woman journalist in Bangladesh, and became the editor of Begum, the first magazine in the subcontinent to exclusively cater to women. It is now in its 69th year of publication.

Her many contributions to society includes working for women's empowerment in rural and urban areas of Bangladesh, and active social work to support underprivileged women and children, which earned her many national awards. They include the 'International Women's Day award 2010, Bishesh Shomannona: Prothom Nari Oggrodot, Annanya Shahitto Purushkar, Tribute to Lifetime Achievement Award and Ekhushey Podok 2011.

I recall many memorable moments with her. When I was about 14, she gave me first culinary lessons. She taught me to hold the knife in one hand and peel off the skin of fruits and vegetables with the other. She used to sit on a stool nearby and cook on the ground leveled stove. Initially, I observed her cooking and later, she gave me step by step instructions on every meal. She was a great cook! On special occasions, such as on Eid, I would visit her early in the morning and sit by her, watching her prepare special dishes, especially our favorite sweet chicken roast. It was mouthwatering, more so because of the love with which she



served it to us. On her last days, she was unable to move much from the bed. However, she guided her cook to prepare the meal so that we wouldn't miss having our favourite dish on Eid.

I remember when I was young I spent almost all my month long school vacations at her place. During the stay she would take me to the Begum office with her each day and I had the fortune to watch her work on the magazine up close. Hence, my initiation into journalism took place while working with her and led to my building a career in professional writing. I am forever grateful to my grandmother for influencing me to write and pursue a career in writing.

During vacations, we had the most delightful heart to heart conversations. On beautiful summer afternoons I used to rest beside her and hear stories of her childhood days, education, friends, work life and so much more. She had a very graceful tone and spoke in the most sophisticated and articulate manner. Instead of falling asleep, I would eagerly listen to her for hours, share experiences and take advice from her that will stay with me all my life. In other words, she was my friend, the one who always emphasised on being a good human being and helped me take important decisions in life.

Apart from being one of the most sophisticated women of her era, she was a person of honour and led a simple life. I recall her mentioning the struggles she faced in her childhood when her father struggled to pay in the expensive Kolkata city in the early 1940's. Later in her life, she was bestowed with fame and fortune. However, she never behaved arrogantly with anyone and continued to greet people with her ever charismatic and charming yet self effacing personality.

Most of the time she was keen on her work and hardly did I see her being preoccupied with material things. I was taught to live simply no matter who I would become and it is a lesson from my grandmother that I will treasure for lifetime. While her passing is a personal loss for me and our family, her absence will be felt all over the nation - she had so many admirers and well-wishers. I have lost my grandmother forever and never will I get her back again. All I can do now is to try imbibe the values that she has tried to teach us and attempt to follow in her footsteps.

The writer is Nurjahan Begum's granddaughter.

SIMs, Smokers and Countrymen

HUMOROUSLY YOURS



NAVEED MAHBUB

"HAVE 15 lakh taka ready by this Thursday! Got it?" Demands the caller.

"Where am I going to get that much money?" Answers my dad to the anonymous caller.

"Ok, then, how about 15 thousand taka?"

At this point, dad should have agreed to pay 20 thousand - the 5 thousand extra for the entertainment of experiencing the fastest slashing of a price tag by 99%.

I sure hope that such threat calls will also reduce by 99% after May 31, 2016. After all, the virtual wall of Facebook and the mobile phone has given the gall to many a troll to have a ball with no possibilities of a fall.

It is also a date past which I, and probably many others, are hoping for a 100% elimination of the feature-film-long recorded messages of mobile phone operators with pleas for biometric re-registration of SIMs. Only after the message is the ring tone, thus adding to the already painfully long waiting time for the recipient to answer the phone, if at all.

I myself fulfill my duty before the first deadline of April 30 and pass the biometric test with Golden GPA 5. Thank heavens, I am not put on the spot on national television through a street



interview.

The deadline shifts by a month. Yet, like the March of the Penguins, one by one, tiny SIMs line up, adding to a whopping 25 million. That's 20% of the total active SIMs in the country, holding off defiantly, showing the middle finger instead of the index and the thumb, to the scanning machine. By *Toutatis*, that's like having the gall of the indomitable Gauls, led by Asterix and Obelix while being inspired by SIMmetrix and Biometrix, against the mighty Romans.

It could very well be that the ring tone and the anticipated "hello" could be further removed by a new message added to the old

one: "Thank you for re-registering your SIM. However, if you haven't, you can do so and re-activate your SIM by paying Taka 150..."

As the last minute of May 31 sees a lot of mobile connections go up in smoke, so do a lot of cigarettes without being accorded a single puff, as the world concludes observing the World No Tobacco Day. It is a day that is a nightmare for the tobacco companies otherwise engaged in killing their best customers. For a day, many stop throwing cigarette butts on the roads (the roads can get cancer too). It is a day, when quitters try to be winners.

June 1. I call my friend, the one with a SIM among the club of 25 million, through WhatsApp. He has also broken his 24 hour fasting from smoking. He can only swallow one loss at a time and hence the SIM gives in to the mighty nicotine. The state coffers take a hit from the mobile phone sector, but definitely not from the tobacco sector as the child continues to roll bids and work at the tobacco plantations while a few less talk on the phone (but continue on WhatsApp).

SIMs, smokers and countrymen, lend me your ears...

That's a tall order, considering we are now short of 25 million pairs. I just hope Fizz has come home on time to re-register...

The writer is an engineer at Ford & Qualcomm USA and CEO of IBM & Nokia Siemens Networks Bangladesh turned comedian (by choice), the host of ABC Radio's Good Morning Bangladesh and the founder of Naveed's Comedy Club. E-mail: naveed@naveedmahbub.com

QUOTABLE Quote

AKIRA KUROSAWA
In a mad world, only the mad are sane.

CROSSWORD BY THOMAS JOSEPH

ACROSS
1 Fair prize
7 Minus
11 Horse related
12 Track shape
13 Swelled
14 Food writer
15 Sheraton
16 Multiplied by
17 Order to Spot
18 Moolah
19 Bus. course
21 Palindromic nickname
22 Michigan city
25 Big snake
26 Lug
27 He had 95 theses
29 Yarn
33 Districts
34 Pan, for one
35 Hawk
36 Market
37 Floor piece
38 Reluctant
39 Headliner
40 Let

DOWN
1 Takes it easy
2 Poor sport's cry
3 Myanmar, once
4 2014 Tim Burton movie
5 Wallet bills
6 Homer's neighbor
7 Miller's salesman
8 Plain to see
9 Eastern warrior
10 Like loafers
16 Succeed in
18 Grief
20 Refers to
22 Tag line
23 Kneecap
24 Web participant
25 Wild parties
28 More healthy
30 Set off
31 Rental contract
32 Blundered
34 Make lots
36 Hotel feature

YESTERDAY'S ANSWER

C	A	R	P	S	R	A	M	P	S
A	M	O	R	E	I	V	O	R	Y
R	E	C	O	N	D	A	R	E	S
E	L	K	T	A	G	A	F	T	
T	I	E	O	N	E	L	E	E	
S	A	T	O	U	T	G	E	R	M
B	A	T	H	T	T	U	B		
R	I	O	T	R	U	N	O	F	F
A	G	O	W	A	N	O	R	E	
B	U	S	A	X	E	S	I	S	
B	A	T	O	N	S	I	T	E	S
I	N	E	P	T	I	R	E	N	E
T	A	R	T	S	N	E	R	D	S

BEETLE BAILEY by Mort Walker

BABY BLUES by Kirkman & Scott