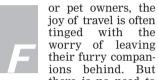
ARBIT it happens here...

#TRAVEL

Pet-friendly Journey

Indian Railways is one of the best transports to carry your pets to longer distance





inged with the worry of leaving their furry companions behind. But there is no need to fret, as not many are aware of the *pet-friendly policy* introduced by the Indian Railways and Catering Tourism Corporation (IRCTC), which allows you to bring your beloved dog or cat along, on your train journeys! This policy eliminates the stress of finding pet sitters or boarding facilities and allows you to

or pet owners, the

free experience for everyone involved. Indian Railways is one of the best transports to carry your pets to longer distance. It is very convenient for animals since it also takes several breaks during the journey and is well-ventilat

However, it's important to be aware of the rules and regulations to ensure a smooth and comfortable experience for both you and your pet.

- Eligible pets: Currently, only dogs and cats are allowed to travel on trains.
- **Travel options:** There are two options for transporting your pet:
- AC First Class or First Class Coupe: You can book the entire compartment exclusively for yourself and your pet, paying the applicable charges for these classes.
- Luggage-cum-Brake Van: You can book your pet in a carrier or a dog box, subject to availability. under the supervision of the Train Manager (Guard).

Booking for your pet

- For AC First Class or First Class Coupe: Make your booking through IRCTC and inform the Divisional Railway Manager (DRM) General Manager (GM) office about your request for a dedicated compartment
- For Luggage-cum-Brake Van: Inquire about the availability of carries or dog boxes from the concerned Parcel office and book your pet at the luggage office, at least three hours before the train's departure.

Additional requirements • Ensure your pet has all

necessary vaccinations and carry the relevant cer-



tificates. Obtain a fitness certificate from a licensed veterinarian, within 24-48 hours,

before travel. • Be prepared to provide food water and a com fortable carrier or leash for your pet during the iourney

Rules

A passenger travelling in First Air conditioner class or first class may take a dog into the compartment, only with the concurrence of fel low passengers, on paymen charges mentioned above. The charges are prepaid. If fellow passengers subsequently object to the dog remaining in the compartment, it will be removed to the Guard's van. No refund is given.

For smaller dogs, there are dog boxes in other compartments, where you can pay minimal charge starting from Rs. 10, according to the weight of the animal.

Dogs detected 'unbooked' with the passenger in Ist class compartments will be charged six times the Luggage scale rate, subject to

a minimum of Rs.50/-A lady travelling alone. with children under 12 years of age, in a first class compartment may take with her in the compartment one dog on payment of charges at the Dog Box Rates, subject to a minimum of Rs.10/-, provided that if another lady enters the compartment, the dog can only be allowed to remain in the compartment with her consent.



Dr. Goutam Sen

akesh, a young IT executive, woke up with high fever scratchy throat and a hacking cough. He knew that it would be impossible to see a doctor during his heavy schedule for the day. Therefore, he to the

ment building and asked the pharmacist to give him some pills for his problems. Since he had been regular at the shop, the pharmacist gave him an antibiotic and analgesic/antipyretic for his immediate use without a prescription. He even said that the medicines were identical to the prescription of Dr. Baid, which had been given for similar complaints the other day. In Chennai, a 2019 study found that 48% of pharmacies sold antibiotics 'without a doctor's note,' often influenced by incentives offered by pharmaceutical companies. This 'unregulated access' fuels self-medication and incomplete treatment courses further accelerating development of resistance. This is true for the rest of India. too.

The Pharmacist had no right to give antibiotics over-the-count er (OTC). The law prohibited it. But the implementation was *just* not done.

Rakesh took the medicines and responded to it within the next two days. The antibiotic, supplied for five days, remained on his bedside table when he went to work on the third day. After that he stopped taking them. A week later his symptoms *reoccurred*. He then, started the medicines again. This time he did not get better after three days. He went to the neighbouring doctor, who then suggested a 'different set of antibiotics' for the next five days. He did not respond to the medication and was advised admission to a tertiary hospital for intravenous antibiotics. Fortunately, the hospital had a 'strict protocol' for antibiotic use. All his blood tests were sent and a third-generation antibiotic was used in the interim period until the results were avail able. His fever subsided but all

other symptoms persisted. The culture report showed that the infection was a *Methicillin* Resistant Staphylococcus Aureus (MRSA) bacteria. Fortunately, his infection was susceptible to a higher and newer antibiotic, which was then given in addition. The hospital stay was more than two weeks and the bill was monu-

Did Rakesh really have to go through all this? Where did the error occur?

Ideally, Rakesh should have seen the doctor at first. This is not always possible, convenience/ expense'

The pharmacist should not have given the antibiotics without a doctor's prescription. This is a very common practice in India. The Tamil Nadu government, acknowledging the issue, launched a "Medicine with Bill" campaign in 2019, making it 'mandatory' for pharmacies to provide bills with 'details of prescription and dispensed medicines.' This was mandated in Rajasthan in 2023. Stricter enforcement of *prescription-only* sales regulations and mandatory pharmacist training, can signifi cantly curb over-the-counter

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(OTC) antibiotic sales.

Rakesh should have continued antibiotics for the full five-day course and stopped only on doctor's advice. Apathy and callousness about following instructions is a part of the present-day gener ation mental makeup.

The same antibiotic was not to be taken intermittently. This is the commonest cause of antibiotic resistance

The first doctor needed to get a culture done before prescribing a 'new set' of antibiotics. Not practical as cultures reports take 48 hrs The tertiary hospital finally did it the right way and was able to

pull him out of the infection at great cost and time. While this is not the scenario

all the time. The outcome could have been worse. Rakesh could have died. Drug resistance accounts for

4.1% of all the years of life lost

Essentially, drug resistance snatches away 40% more life years in India than it does worldwide. (According to Max Institute of Healthcare Management at the Indian School of Business). 'Infectious diseases' have declined as a cause of mortality in India. but are still a cause for concern. In 2019, bacterial infections were implicated in 1.79 million deaths across the country, according to the Global Research on Antimicrobial Resistance That's 19% of the 9.92 million deaths. estimated to have occurred in that year. Of those who died due to a bacterial infection, 16.6% succumbed because the bacteria was resistant to the available arsenal of drugs. Further, 58.1% had a bug that was implicated in their death, but antimicrobial resistance may or may not have been a factor.

due to premature mortality in

India, as against 2.2% globally.

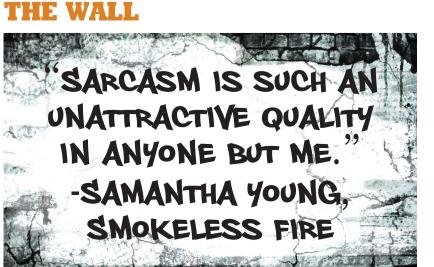
The antibiotic resistance is a big menace, which has increased due to bad practices in 'prescribing' and 'easy availability' across

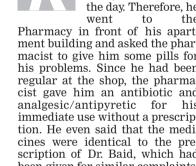
the pharmacy counter. The World Health Organization (WHO), in 2017, created a *classification* sys*tem* for antimicrobial drugs to counter this bad practice. The WHO's system. AWaRe places all available antimicrobials

into three categories: 'Access, Watch and Reserve.' Access is for highly targeted compounds that are relatively

unlikely to contribute to antimi crobial resistance. So, these should be the most accessible and widely







Every hydrogen atom in your body is around 13.5 billion-years-old

ydrogen was the first chemical element that appeared at the beginning of the universe's existence. All the hydrogen, in the world, has existed since that time, and new hydrogen has not appeared. This means that the age of every atom of hydrogen in the world, including those in the human body, is around 13.5 billion-years-old. A little later, as a result of nuclear synthesis, some hydrogen atoms became atoms of helium, carbon and so on. But around 75% of the mass of the 'visible universe' still consists of hydrogen.

The 'antibiotic resistance' is a big menace, which has increased due to bad practices in 'prescribing' and 'easy availability' across the pharmacy counter. The World Health Organization (WHO), in 2017, created a *classification* system for antimicrobial drugs to counter this bad practice.



'Failing Antibiotics

#HEALTH WEALTH



used. *Watch* is for those that

should be used more sparingly and

for patients who are the most sick.

hood of contributing to the emer-

gence of 'resistance' in bacteria.

because they have a greater likeli-

Reserve is for antibiotics of

The Indian government has

long been aware of the risk that

antimicrobial resistance poses to

its citizens. Its 2017 National

Health Policy singled out antimi-

highlighted the need for 'pharma-

covigilance including prescrip-

tion audit, inclusive of antibiotic

usage, in the hospital and commu-

nity.' Shortly afterwards, the

National

Indian government launched its

Antimicrobial Resistance (2023),

which identified six priorities to

Action Plan on

crobial resistance as an issue, and

last resort that are meant to be

used only in severe, multidrug-

resistant infection, when all other

options have been exhausted.

combat 'antimicrobial resistance,' including education, training, surveillance and improved infection control. An important part of India's

response since then has been the establishment of 'Antimicrobial Stewardship' programmes in hospitals as part of an accreditation These programmes process. include 'training' hospital staff in responsible antibiotic use. Testing or 'resistance' before giving antibiotics, implementing guidelines and tracking levels of 'antibiotic resistance' should be the norm. AIIMS Delhi, recognizing the gravity of the situation. an Antibiotic implemented Stewardship Program (ASP) in 2017. This initiative reduced inappropriate antibiotic use by 20% within a year. Similar programs across other hospitals, coupled with investments in rapid diagnostic tests, are crucial for curbing drug resistance. India's booming pharmaceuti-

cal industry is a major contributor to the problem of 'antimicrobial resistance.' Pharmaceuticals are an important export business for India, as well as the domestic market. Industry has become adept and unscrupulous at marketing.

Competition in the antibiotics

space has led to aggressive pres-

sure to sell antibiotics. The incen-

tives there are to hugely 'oversell'

antibiotics and not just any antibi-

otic. It's to oversell the newest

antibiotics, which really shouldn't

be available to the public, anyhow.

dose combinations (Amoxicillin

combined with Clavulanate), in

which fixed doses of two antibi-

otics are combined in a single

product. These are a particular

feature of India's antibiotics man-

ufacturing sector Fixed doses cre-

ate a risk of either under-dosing

or over-dosing, both of which cre-

ate conditions for 'resistance' to

emerge. Around one-third of all

antibiotic doses, consumed in

India in 2019, were fixed-dose com-

bination products, and nearly 23%

of these were not approved by

India's national drug-approval

authority. The problem for drug

CALL ME WHEN YOU PLAY

ASPARAGUSLAND.

By Rick Kirkman & Jerry Scott

The other problem is fixed-

ndia's booming *pharmaceutical industry* is a major contributor to

the problem of 'antimicrobial resistance.' Pharmaceuticals are an

important export business for India, as well as the domestic mar-

ket. Industry has become adept and unscrupulous at marketing.

Competition in the antibiotics space has led to pressure to sell.

regulation in India is that statebased drug regulatory authorities can approve medications for marketing and use in their state, even if the product has not been approved by the Central Drugs Standard Control Organization. The pharmaceutical sector also

has problems with quality, particularly at the low-cost end of the market, in which competition for profits is fierce. Estimated 10% of medical products, in low and middle income countries, are of poor quality, but the sheer size of the sector makes it an important issue Antibiotics, that contain less than the labeled amount of active ingre dients, or that are contaminated with other ingredients, also contribute to the problem of 'resistance.' The Indian government is working to address this, announc ing a deadline of 6-12 months for all pharmaceutical manufacturers in India 'to upgrade their operations' to meet WHO standards, for good manufacturing practice. It is now investing more resources in pharmaceutical regulation. In the past two decades, number of staff working in drug control, both at the national headquarters and in the states, has greatly increased. Many of the staff are highly qualified and have extensive experience. Unfortunately, the quality of drug regulation continues to vary, considerably, from state to state.

There is also a gradual increase in awareness of the scale and nature of the 'antimicrobial resistance' problem in the general population. In colloquial terms, 'Dawa ka asar nahi ho raha hai. The poorest patients are less likely to be able to afford the laboratory testing that would give them a more targeted, effective antibiotic treatment. Even if they can, they might not be able to afford to complete a *full course*. Hence, they might buy a cheaper product or a lower dose than recommended. This is now being improved by social welfare programmes like AYUSH. There is ample scope for further improvement

Antibiotics are double-edged weapons. Used indiscriminately will end up in 'massive drug resistance' and higher mortality Imagine the situation when we face death because of the dearth of effective antibiotics! Finally, it must be remembered that no new antibiotics has been introduced in the last decade. Hence, we need to conserve and use with care 'the antibiotics that remain effective.' rajeshsharma1049@gmail.com

ZITS

MOM, CAN I HAVE

FRIENDS OVER TONIGHT

SURE!

FOR A STUDY GROUP?

#INSIGHT

How Fire Shaped **Ancient Civilizations**

The mastery of 'fire' transformed ancient civilizations. Even if humans may not have invented it, we found better ways to use it.

match in a suitable spot. and nurture the flame so that it spreads. It's no wonder that different scouting groups award merit padges to campers who 'successful

nyone who has ever tried to start a campfire knows it's not that easy, even with matches. A person has to get the right kindling and tinder, place the

ly foster the flames.' It took a long time for ancient humans to master fire-making and adapt it to daily life. But once 'fire' became a consistent tool, it changed many aspects of early human civilization.

How Humans Found Fire

Cartoons always depict cavemen having an epiphany, in which they discover the wheel or start a fire for the first time. But there wasn't just one moment when a caveman picked up a hunk of pyrite, struck it against a rock, and marvelled at the resulting sparks. Instead, hominins lived with natural fire long before they were able to replicate and con-

"At that period, they started to conceptualize 'fire' and understand that stuff tastes better when it's not raw." savs Francesco Berna, a professor of Archaeology at Simon Fraser University in Burnaby. British Columbia, who studies the Archeology of Fire.

When Was Fire Invented?

So, it wasn't that fire was invented and spread like, well... wildfire. It's more that humans lived with natural fire, developed tools for controlling flames, and adapted those tools over time.

There's archaeological evidence that archaic humans used 'fire' sporadically as far back as 1.6 million vears ago. But it wasn't until around 350,000 years ago that 'fire' was widely used, with archaeological sites from that time being the first to reveal 'consistent evidence of fire.' It was then that spark turned to flame. From then on, fire would play an essential part in human his tory.

What Did Fire Mean To Early Humans?

Although humans have long had access to fire, scientists have only shown greater interest in the archaeology of 'fire' in the past few decades. Archaeologists now debate





Fire and Early Hunting Of course, the benefits of fire

vision." he adds. "Not only that, hunters and gatherers used fires to stop grass lands from becoming too overgrown, allowing them to attract the animals they wanted to eat. It's also possible that flames helped humans remove foliage that wasn't desirable to their selected prev. Berna says, "increasing the pres ence of plants that their target species preferred."

Fire and Ancient Burial Practices





ments it brought to their diet, shel-

was widely adapted, archaic

humans were benefited from advan-

tages that their own ancestors did

How Fire Changed Ancient Life

Fire brought many changes to

daily life. It allowed people to

occupy dark spaces such as caves

and to stay safe from predators in

open areas such as savannas.

But they do agree that once fire

ter, and daily well-being!







Bonfires also brought more than light and warmth into the night They attracted people and allowed for bonding and language development, as well. "It was very important as a social aggregator, Berna says. The adaptation of 'fire' also changed their ability to acquire food.

Fire and Early Farming Before farming, archaic humans 'managed landscapes,' using fire to manipulate the terrain and remove wooded areas. "Reducing tall trees allowed more sunlight." Berna says. which encouraged growth of the desired plants for foraging.

As humans became farmers, fire also helped develop land for planting. "There were some early farmers who would use slash and burn,' Berna adds. "They would grow crops in previously forested areas.'

weren't limited to foraging. Scientists currently have several ideas on how they think 'fire' helped archaic humans hunt.

"There are some hypothes and you can see some depictions of *Neanderthals* or *Homo sapiens* with a torch and pushing big game into traps, jumps, or mud. That may be one way," Berna says. "Most animals are afraid of fire.'

But he thinks that it's more likely that early humans used 'fire' to modify the 'landscape' so that it was easier to hunt. "By burning down tall grass, you can have better

The earliest evidence of cremation dates back to 40,000 years ago, in Australia. However. Berna savs that scientists do not know whether those cremations were intentional or accidental. Consistent evidence of cremation doesn't occur until relatively late in human history. around the time when humans stopped being nomadic.