



The Actuary India

Magazine of the Institute of Actuaries of India

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Poem

The Path Less Skewed

Employee Benefits, Retirement

Unified Pension Scheme: Is It the Right Path to Retirement Security?

Trivia

The Origins of the Ubiquitous "Smiley"

Health Insurance

Anti-Microbial Resistance in India



Did you know that the smiley emoticon had its origins in Insurance Industry? Head to [our Trivia](#) section to learn more, and impress your colleagues at the Christmas dinner.

On that note, wishing you all a very Merry Christmas and a Happy New Year! Hope you have an amazing 2025 ahead.

PS. The nerd in me has an interesting observation about 2025: It is a perfect square (of 45), perhaps the only one in our lifetimes.

Christmas holidays are perfect for getting cozy and reading books/magazines next to the fireplace (/heater). Or perhaps, travelling to winter wonderlands. Or maybe go on a winter hike, and take the path less travelled. And during one such epiphanic moments, one of our Editors came up with ["Path Less Skewed"](#), an actuarial take on Robert Frost's famous poem. While reading the poem, it reminded me of a colleague of mine, who used to simulate what to have for lunch using Monte Carlo simulations depending on his mood, weather, etc. (actuaries, ikr! haha)

Perhaps such out-of-the-box thinking is what is required to tackle the risk posed by Climate Change. You could have gotten more insights on Climate Risk in India from the 1st ever webinar on Climate Change Risk, held by IAI. In case you missed it, [one of the attendees has summarized it here](#).

Climate change trend is difficult to isolate in our actuarial work, and I have experienced the challenges first-hand. While Climate Risk impacts GI actuaries significantly, actuaries working in Health Insurance seem to have an additional challenge on their hands in terms of Anti-Microbial Resistance, [brilliantly captured here](#).

I would also like to take this opportunity to thank all the authors for their contributions in 2024. We had a plethora of articles to choose from, and are excited about 2025 line-up. Stay tuned!

Anirudh Bansal
Editor
Magazine of the Institute of Actuaries of India

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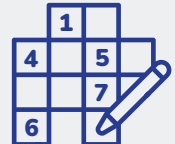
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Features

Unified Pension Scheme: Is It the Right Path to Retirement Security?

The Unified Pension Scheme (UPS) aims to provide secure, assured pensions for central government employees, blending elements of the Old and New Pension Schemes. In this insightful analysis, Kanika Gupta highlights UPS's key features, risk factors, and actuarial considerations, offering a comparative view of UPS and NPS to guide retirement planning.



On August 24th, the Union Cabinet took a landmark decision that will transform retirement benefits for government employees. The new Unified Pension Scheme (UPS), set to roll out in April 2025, aims to strike a balance between the Old Pension Scheme (OPS) and the New Pension Scheme (NPS). It will provide assured pensions for approximately 2.3 million central government employees, with the potential for an even broader impact as states adopt the scheme.



Key features of the scheme:

- 1. Assured Pension:** - Assured pension is equivalent to 50% of the average basic pay drawn over the last 12 months prior to superannuation. - For a minimum qualifying service of 25 years, employees are eligible for this fixed assured pension. - For lesser service (minimum of 10 years), the pension is proportionate.
- 2. Assured Family Pension:** - Family members receive 60% of the pension of the employee immediately before their demise.
- 3. Assured Minimum Pension:** - A minimum pension of ₹10,000 per month is guaranteed after a minimum of 10 years of service.
- 4. Inflation Indexation:** - Dearness relief is based on the All India Consumer Price Index for Industrial Workers (AICPI-W), similar to serving employees.
- 5. Lump-Sum Payment at Superannuation:** - In addition to gratuity, a lump-sum payment of 1/10th of the monthly emolument (pay + DA) as of the date of superannuation is provided for every completed six months of service. - Importantly, this payment does not reduce the quantum of assured pension.
- 6. Eligible Employees:** - Central government employees can choose between the National Pension Scheme (NPS) and the Unified Pension Scheme (UPS). - Existing central government NPS subscribers can also switch to UPS.

Comparing UPS and NPS

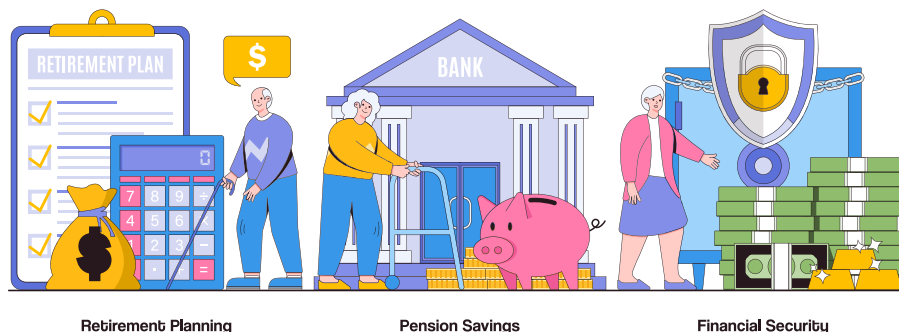
- Risk Sharing: UPS, particularly in a defined benefit format, often shares investment and longevity risks between the employer and employee. In contrast, NPS, being a defined contribution scheme, places the investment and longevity risk primarily on the subscriber.
- Flexibility: NPS offers greater flexibility in terms of contributions and withdrawals compared to a traditional UPS.
- Benefit Predictability: UPS generally provides more predictable retirement benefits (in DB schemes), while NPS benefits are less predictable and depend on market performance and annuity rates.

In summary, both UPS and NPS have distinct calculation methodologies and risk profiles. UPS tends to focus on managing risks and providing stable benefits, while NPS emphasizes individual contributions and market-based returns.

Unified Pension Scheme: Is It the Right Path to Retirement Security?

What to opt

While NPS offers greater flexibility and control to the employee, such as the option to opt for higher equity allocation, the UPS does not allow any form of investment customization. However, it does offer a level of comfort and security in the form of a guaranteed pension. The UPS also mitigates the risk of any poor investment decisions made by the employee, such as a sudden shift towards equities during market corrections, which could lead to significant losses.



Let's take an example to understand the concept. Consider a government employee who begins their career with a basic monthly salary of ₹50,000. Under the UPS, the employee contributes ₹5,000 per month (10% of basic pay), while the government contributes ₹9,250 per month (18.5% of basic pay). Assuming a 30-year career with an annual salary increment of 5%, and the corpus managed under the UPS and henceforth invested conservatively at a 7% CAGR, the accumulated corpus would amount to approximately ₹3.1 crore at the end of 30 years.

Pension Payout Phase (30 Years)

Next, consider the pension payout period spanning the following 30 years. The employee would start withdrawing ₹1.01 lakh per month in the 31st year, which is 50% of their last drawn basic pay. We will consider an average inflation of 4% over the next 30 years and adjust the pension payouts accordingly. While these withdrawals are being made, the remaining corpus continues to grow at 7% CAGR since it remains invested in conservative instruments under the UPS. Remarkably, by the end of the 60th year, the corpus would not only sustain these withdrawals towards pension payouts but also generate a surplus of nearly ₹3.5 crore. This surplus underscores the scheme's potential to be fiscally beneficial for the government.

In light of this analysis, central government employees might still find the NPS to be the more advantageous option, particularly if they operate it in a conservative setting, with 80%-90% of the corpus invested in government securities at all times.

All facts has been summarized in the excel sheet link below

[View excel sheet](#)

Rationale Behind Key Assumptions: -

- Investment Return - 10-year Government of India bond yields around 6.5–7% as of late 2024, which aligns with our assumption. This indicates that a 7% return is achievable from a mix of fixed-income and equity instruments over time ([India 10-Year Bond Historical Data - Investing.com India](#))
- Inflation -We have assumed a 4% inflation rate for India, which aligns with the Reserve Bank of India's target inflation rate ([RBI Inflation 2024: RBI holds inflation forecast at 4.5% – Stability or risk ahead?](#))
- Remaining Lifetime Post Retirement – We have assumed a 30-year remaining lifetime post-retirement to demonstrate the financial impact of living longer than the average. While the typical life expectancy post-retirement in India is around 12-15 years ([India Demographics 2024 \(Population, Age, Sex, Trends\) - Worldometer](#)).

Unified Pension Scheme: Is It the Right Path to Retirement Security?

UPS:- Actuarial valuation

Actuarial Considerations in a Unified Pension Scheme

1. Risk Assessment and Management

From an actuarial standpoint, the UPS requires careful consideration of various types of risk:

- **Longevity Risk:** This is the risk that retirees will live longer than expected, increasing the total payouts. Actuaries must use demographic data to project life expectancy accurately and adjust funding requirements accordingly.
- **Investment Risk:** UPS will likely pool funds from various sources, making investment risk management crucial. Actuaries must develop strategies to balance risk and return, ensuring that the scheme can meet its long-term liabilities.
- **Inflation Risk:** Inflation erodes the real value of pensions. Actuaries need to incorporate inflation assumptions into their models and consider mechanisms such as cost-of-living adjustments (COLAs) to mitigate this risk.

2. Funding and Sustainability

A key actuarial challenge is ensuring the financial sustainability of the Unified Pension Scheme. This involves:

- **Funding Mechanisms:** Actuaries must determine appropriate contribution rates for both employers and employees to ensure that the scheme is adequately funded. This requires analysing historical data, projecting future cash flows, and setting funding targets.
- **Reserve Management:** Building and maintaining reserves is essential to cover future liabilities. Actuaries must design reserve policies that balance current benefit payments with future obligations.
- **Contribution Rate Adjustments:** Regular actuarial valuations are necessary to assess whether contribution rates need adjustment to address any funding shortfalls or surpluses.

3. Equity and Benefit Design

The Unified Pension Scheme must balance equity with financial feasibility. Actuaries play a critical role in:

- **Benefit Calculation:** Designing benefits that are fair and equitable across different sectors and employment histories. This may involve developing formulas that take into account varying career lengths, income levels, and employment types.
- **Portability:** Ensuring that benefits are portable, so that individuals who switch jobs or sectors do not lose accrued pension rights. Actuaries must design mechanisms for transferring benefits between different employers and sectors smoothly.
- **Intergenerational Equity:** The scheme must be fair to all generations. Actuaries need to model how different generations will be affected by the scheme and ensure that it does not disproportionately benefit or disadvantage any particular group.

4. Regulatory and Compliance Issues

Actuaries must also navigate regulatory frameworks that govern pension schemes. This involves:

- **Compliance with Legal Standards:** Ensuring that the UPS meets all legal and regulatory requirements. Actuaries must stay updated on changes in pension regulations and adapt the scheme accordingly.
- **Reporting and Transparency:** Providing clear and accurate reporting on the financial health of the scheme. This includes preparing detailed actuarial reports and ensuring transparency in how funds are managed and allocated.

In conclusion, The Unified Pension Scheme represents a significant evolution in pension management, offering the potential for greater efficiency, portability, and fairness. However, from an actuarial perspective, its successful implementation hinges on a meticulous approach to risk management, funding, benefit design, and regulatory compliance. Actuaries play a vital role in ensuring that the UPS is financially sustainable, equitable, and responsive to the needs of all stakeholders. By addressing these challenges effectively, the Unified Pension Scheme can become a cornerstone of a more unified and resilient retirement system.

Disclaimer on Sensitivity to Assumptions

The comparison between the Universal Pension Scheme (UPS) and the National Pension Scheme (NPS) presented in this analysis is based on a set of assumptions regarding investment returns, inflation etc. It is important to recognize that the results of this comparison are sensitive to these assumptions.

As such, the results presented should be viewed as indicative rather than definitive, and it is advised to consider specific/ situational scenarios and reassess retirement planning assumptions to ensure alignment with evolving economic conditions and personal circumstances.

About the author(s)



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Kanika has spent the past decade specializing in U.S. and Asian Retirement benefits. With extensive experience in pension strategy and risk analysis, she is passionate about helping organizations navigate the complexities of retirement planning. Outside of work, she enjoys watching movies and traveling to new destinations, seeking inspiration and new experiences along the way.



Anti-Microbial Resistance in India

Antimicrobial resistance (AMR) is a growing global health crisis that threatens to undermine decades of medical progress. From actuarial perspective, it could undermine our analysis. **Nidhi Patel** helps us stay on top of this developing threat through her well-researched article.



Introduction

Imagine a world where 'The Avengers' are losing the battle, not to Thanos, but to tiny antibiotic-resistant bacteria that turn minor injuries into life-threatening infections.

Antimicrobial resistance occurs when microorganisms such as bacteria, viruses, fungi, and parasites evolve to resist medications, leaving healthcare systems struggling to combat infections that were once easily treatable. Antibiotic resistance (ABR), a critical subset of AMR, specifically involves bacteria's resistance to antibiotics. Understanding the distinction between AMR and ABR is vital for accurate risk assessments and policy planning.

The impact of AMR extends beyond healthcare into the world of insurance and risk management, affecting everything from claims experiences to actuarial models. For actuaries, AMR presents a profound challenge: how do you quantify the risks of a world where medical costs skyrocket, recovery times are prolonged, and the unpredictability of resistant infections reshapes mortality and morbidity trends?

As AMR drives higher healthcare costs and worsens insurance claims experience in both the short and long term, its financial burden remains vastly underestimated. This paper seeks to educate readers about the consequences of AMR, emphasizing the urgent need for awareness and proactive measures. By examining how AMR is reshaping healthcare and insurance systems, it highlights why tackling this silent pandemic is essential to securing the future of both human health and global stability.

The evolution of AMR: Tracking its Growth and Impact

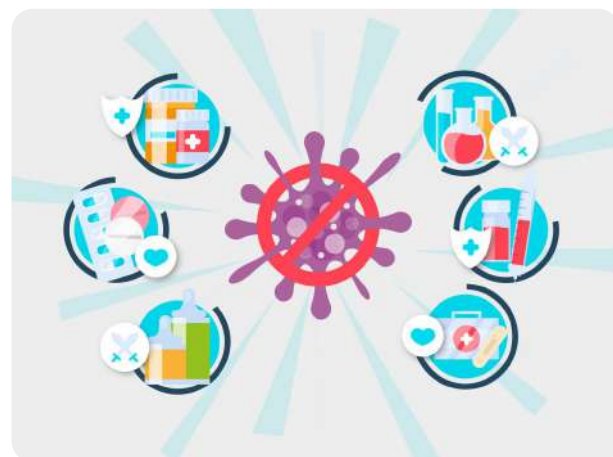
Causes of AMR

- **High antibiotic consumption** without prescription due to easy availability of antibiotics and the common practice of self-medication.
- **Incomplete treatment courses** due to the lack of public awareness about the importance of completing antibiotic courses. This often leads to improper use, with patients discontinuing medication as soon as they feel better, thereby fostering resistance.
- **Antibiotics are extensively used** in animal husbandry in India not just to prevent and treat infection but also as growth promoters. This practice is poorly regulated and contributes to the spread of resistant bacteria in humans too.
- **Inadequate healthcare infrastructure** around infection control, poor sanitation, and overcrowded conditions, which facilitate the spread of resistant microbes among patients.
- **Slow Pace of New Antibiotics:** The pharmaceutical industry in India, while large and significant, faces challenges in innovation and funding, affecting the development of new antibiotics to combat resistant strains.
- **Global and Domestic Travel:** With an extensive internal population movement, India experiences significant challenges in controlling the spread of resistant pathogens across its borders and within.



Consequences of AMR

- **Increased Healthcare Burdens:** AMR leads to longer durations of illness and hospital stays, increased frequency of treatment failures, and the need for more expensive, second or third-line drugs that are often out of reach for the average citizen.
- **Economic Impact:** The economic burden of AMR in India is substantial, with increased healthcare costs and lost productivity from prolonged illness affecting both individual households and the nation's economy. These costs are not only borne by healthcare providers but also by insurance companies and patients.
- **Strain on Public Health:** The spread of AMR compounds existing public health challenges in India, particularly in areas with high population density and limited healthcare resources.
- **Compromised Healthcare Advances:** AMR threatens the effectiveness of critical procedures like surgeries, chemotherapy, and care of premature infants, which depend critically on effective antimicrobials. A medical expert highlighted that AMR infections can spread within the body, affecting multiple organs and complicating recovery, though they do not cause new second order diseases. This spread exacerbates existing infections, delaying recovery, and increasing treatment complexity.
- **Global Isolation Risks:** High levels of AMR might lead to international sanctions, travel restrictions, or trade limitations, especially in sectors like pharmaceuticals and agriculture, which are crucial to India's economy.



Mapping AMR: A Global Crisis

Antimicrobial resistance (AMR) is one of the top ten public health threats to human beings, according to the World Health Organization (WHO). It complicates the management of infections, leading to prolonged illness, increased mortality, and higher healthcare costs. In 2019, AMR was estimated to be linked to approximately 4.95 million deaths worldwide, with more than 1.27 million directly attributable* to resistant infections and 1 in 5 of those deaths occurred among children under 5 years old, illustrating its severe and widespread consequences. A groundbreaking new study published in the Lancet (a weekly peer-reviewed general medical journal founded in England in 1823 and is one of the oldest and highest-impact academic journals in the world) warns that antimicrobial-resistant pathogens could kill over 39 million people by 2050. The research also predicts that a staggering 169 million deaths will be associated* to drug-resistant infections by that year. Another article published in the Lancet states that AMR is a leading cause of death globally, surpassing diseases like HIV/AIDS and malaria in some regions. The study aimed to assess the global impact of antimicrobial resistance (AMR) by identifying key pathogen-drug combinations and the regions most affected. The researchers estimated the data by using predictive statistical models based on extensive data from multiple sources, including microbiology data, hospital records, and surveillance reports. They applied a two-stage spatiotemporal modeling framework which was adjusted for various factors. Estimates were aggregated across drugs at 95% uncertainty intervals, accounting for the co-occurrence of resistance to multiple drugs. Based on the study, Australia had the lowest AMR burden while Western sub-Saharan Africa had the highest burden. Five regions had all-age death rates associated with bacterial AMR higher than 75 per 100,000: all four regions of sub-Saharan Africa and South Asia. Sub-Saharan Africa had the highest all-age death rate attributable to and associated with AMR.

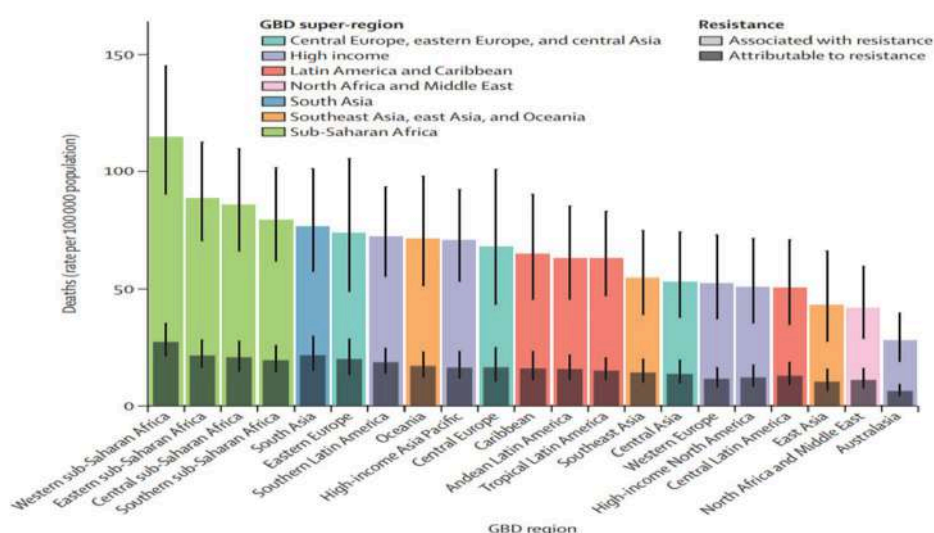


Fig :- Directly attributable deaths from AMR are those directly caused by resistant infections, while associated deaths involve cases where AMR is present but not the sole cause of death, with other contributing factors involved.

Efforts to combat AMR are further hindered by significant variations in data collection and analysis methodologies across different studies. Adding to these challenges is a critical limitation in AMR detection, as highlighted by a medical professional consulted for this report. Testing for AMR is only possible in individuals already suffering from an infection, as resistance can only be identified from organisms actively causing the disease. This limitation precludes proactive testing in healthy individuals, emphasizing the importance of robust surveillance systems to monitor and address AMR effectively. Researchers investigating the health, economic, and societal burden of AMR are faced with limited data availability, resulting in uncertainty about the long-term cost and clinical efficacy outcomes for interventions (e.g., antibiotic stewardship programs (ASPs)) currently in place to tackle AMR.

AMR: A growing Concern for India

India is a global hotspot of antimicrobial resistance. It is home to 1.45 billion people, which is nearly 18.5% of the world's population. India leads the world in human antibiotic use, a prime driver of antimicrobial resistance. A public-private divide in booming but sometimes poorly regulated pharmaceutical industry has created simultaneously both excessive use of antibiotics and limited access to them.

According to a report by University of Washington, India has the 60th highest age-standardized mortality rate per 100,000 population associated with AMR across 204 countries. In 2019, there were 297,000 deaths attributable* to AMR and 1,042,500 deaths associated* with AMR in India. AMR is one of the top three causes of death, yet it remains largely neglected. In contrast, conditions like cardiovascular disease and Chronic Respiratory Disease are widely discussed and well-known, overshadowing the urgent threat posed by AMR.

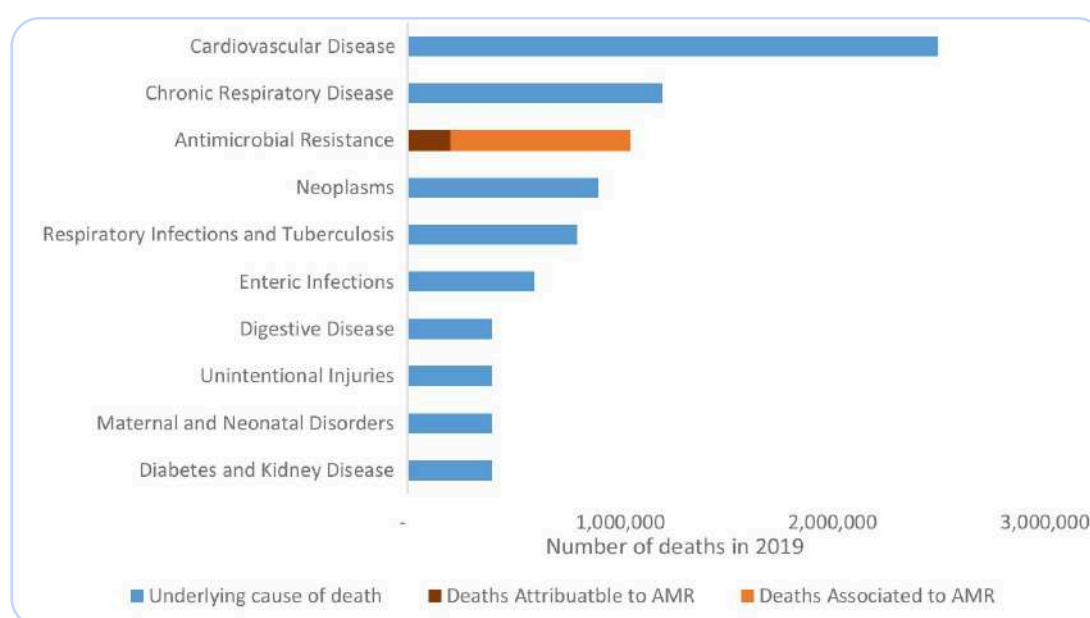


Fig: Directly attributable deaths from AMR are those directly caused by resistant infections, while associated deaths involve cases where AMR is present but not the sole cause of death, with other contributing factors involved.

The problem is likely to have been exacerbated by the COVID-19 pandemic and the inappropriate use of antibiotics to combat a viral infection against which they are utterly ineffective — a phenomenon that occurred both in India and elsewhere. "The pandemic did see the deprioritization of antimicrobial stewardship efforts everywhere," says Dr. Kamini Walia, a microbiologist at the Indian Council of Medical Research in New Delhi. "In the absence of a more specific treatment for COVID, I think everyone was popping antibiotics." Broad-spectrum antibiotics, which should be reserved for severe infections, make up 75% of all prescriptions in India's hospitals. Doctors, however, are not entirely to blame. In overcrowded public hospitals, they often lack the time to properly diagnose illnesses, differentiate between bacterial and viral infections, and devise appropriate treatment plans, as noted by Dr. SP Kalantri, a medical superintendent at Kasturba Hospital and MGIMS, Wardha, Maharashtra.

Both rural and urban patients often lack awareness about antibiotic resistance, and despite the availability of tests, doctors frequently opt for prescribing antibiotics over conducting diagnostics, sometimes out of uncertainty about the correct treatment. In response to the rampant misuse of antibiotics and the resultant AMR, India joined the Global Antimicrobial Resistance Surveillance System in 2017. However, the clinical management of drug resistant infections remains inadequate, perpetuating a cycle of poor prescribing practices and escalating AMR.

Collaborative initiatives like the Antibacterial Resistance Leadership Group aim to harmonize research and data collection, but challenges persist. Representation of Indian populations in research is low, and studies are often small scale and retrospective, limiting the understanding of AMR's molecular patterns. There is a pressing need for better collaboration among government, academia, and private sector stakeholders to enhance clinical research and management of drug-resistant infections in India. Over 70% of research on these infections is conducted by private healthcare entities, focusing on non-urgent care like cancer therapy and transplants. Therefore, involving these sectors more deeply could significantly improve research outputs and strategies to combat AMR in India.

Mitigating AMR through Insurance

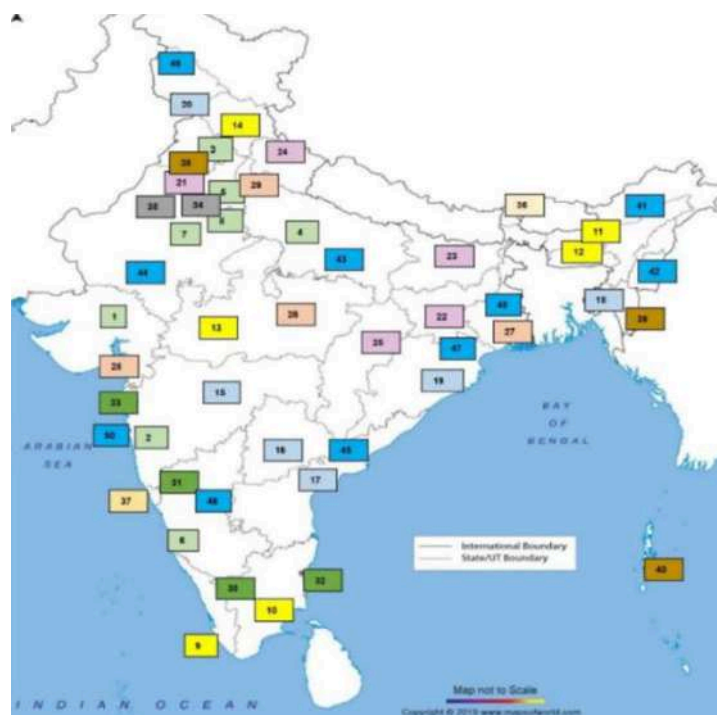
Policy Adjustments

Vaccinations for Policyholders with a Maximum Cap: Insurers can offer complimentary coverage for essential vaccinations that help prevent infections and reduce antibiotic use. Policyholders could be fully reimbursed for these vaccinations, with a maximum cap on the total amount reimbursed. This proactive approach reduces the likelihood of preventable infections, which in turn decreases unnecessary antibiotic use and helps combat AMR. For insurers, it leads to fewer infection-related claims, lower overall healthcare costs and better risk management, while positioning them as leaders in preventive care and public health initiatives.

Telemedicine Access: Provide telemedicine services to enable timely medical advice and early intervention for minor infections, potentially reducing the risk of more severe AMR complications. This would reduce the need for physical visits to clinics or hospitals. Telemedicine also facilitates earlier and quicker intervention, enabling doctors to manage minor illnesses before they escalate into more severe conditions that would require stronger treatments.

Regional AMR Trends in Underwriting: Rather than focusing solely on individual AMR risks, insurers can consider incorporating regional data on AMR prevalence when underwriting policies. Leveraging India's 35 sentinel sites, which are part of the National Antimicrobial Resistance Surveillance Network (NARS-Net), insurers can access detailed, localized AMR data. This regional approach helps tailor policies effectively without making the process cumbersome for individual policyholders. Pricing can be tailored, subject to approval from the Insurance Regulatory and Development Authority of India (IRDAI), with a cap to ensure affordability.

Diagnostic Tests: Insurers can conduct advanced diagnostic testing at the underwriting stage to identify potential bacterial infections or resistance profiles. The results of these tests can help insurers to better understand the health risks of the prospective policyholders. Such information shall support insurers to take better informed decisions in premiums adjustments like offering discounts or charging extra premiums.



Launch AMR Data Collection and Claims Analytics

Insurers can create internal systems to collect data on AMR-related claims, categorizing infections by type, treatment success, and associated costs. This data would allow for more accurate risk modeling and help insurers adjust underwriting practices and pricing. By analyzing trends in AMR, insurers can also collaborate with public health authorities to better predict future outbreaks and assess the long term financial impacts of resistant infections. Leveraging data analytics in this way positions insurers as leaders in proactively managing emerging health risks. This data can be shared among the insurers and reinsurers for better quality, relevance, and reliance.

Collaborations

Healthcare Providers: Collaborate with other healthcare providers like to collect and analyze data on antibiotic use, AMR rates, and treatment outcomes. By working with providers, insurers can also promote Antibiotic Stewardship Programs (ASPs), encouraging responsible antibiotic prescribing practices. Additionally, providers can help raise awareness among patients about the importance of adhering to treatment plans and avoiding unnecessary antibiotic use, which benefits both patient health and long-term cost control.

Pharmaceutical Companies: Partner with pharmaceutical firms for research and development of new antibiotics and diagnostics. Insurers and pharmaceutical companies can also co-sponsor educational campaigns aimed at informing the public about the risks of AMR and the importance of responsible medication use.

Government and Public Health Organization: Insurers can collaborate with government bodies such as the NCDC, WHO, or local public health departments to access national AMR surveillance data and stay informed on resistance trends. Governments often spearhead initiatives to combat AMR through policy, research funding, and public health campaigns. Insurers can leverage this data to refine their risk models, take informed underwriting decisions, and shape premium structures based on AMR prevalence.

Case Studies

Case Study 1: The Netherlands' Approach to AMR

Overview

The Netherlands has one of the lowest rates of antibiotic resistance in the world, thanks to a comprehensive national strategy that includes strict regulations on antibiotic use, robust infection prevention and control measures, and significant public and professional education efforts.

Key Points

Antibiotic Stewardship Programs: The Dutch healthcare system has implemented stringent antibiotic stewardship programs in hospitals and primary care settings.

Surveillance and Monitoring: A strong national surveillance system tracks antibiotic use and resistance patterns, helping to inform policy and clinical practice.

Public Health Campaigns: Nationwide campaigns educate the public about the risks of AMR and the importance of responsible antibiotic use.

Insurance Policies: Dutch health insurance policies cover preventive measures, including vaccinations and infection control initiatives, reducing the overall need for antibiotics.

Case Study 2: Sweden's AMR Strategy and Health Insurance Coverage

Overview

Sweden's approach to AMR includes a comprehensive national strategy supported by health insurance policies that cover AMR treatment and preventive measures.

Key Points

National Strategy: Sweden's AMR strategy includes regulations for antibiotic use, surveillance of resistance patterns, and public education initiatives.

Insurance Policies: Swedish health insurance covers costs associated with AMR treatments and supports preventive measures such as vaccinations and prophylactic antibiotics.

Public Engagement: Insurance companies in Sweden support public awareness campaigns about AMR and responsible antibiotic use.

Innovative Models: Swedish insurance companies have developed models that link premium costs to the implementation of antibiotic stewardship practices by healthcare providers.

Case Study 3: India's Actions to Combat AMR

National Efforts

India's National Action Plan on AMR (2017) focuses on surveillance, regulation, and stewardship programs to combat antimicrobial resistance. The updated NAP-AMR 2.0 emphasizes inter-sectoral collaboration and includes budgeted action plans. At the recent UNGA meeting, India highlighted the need for global cooperation to tackle AMR, aiming to reduce AMR-related deaths by 10% by 2030 and mobilize \$100 million in funding.

State-Level Efforts

Kerala was the first state to implement strict regulations with Operation Amrith, enforcing the 2011 H1 rule to ban over-the-counter sales of antibiotics without a prescription, significantly reducing misuse. Telangana has followed suit as the seventh state to adopt similar measures, though Kerala's efforts are challenged by the lack of uniform regulations across neighboring states.

In conclusion, Antimicrobial resistance (AMR) stands as one of the greatest challenges to modern medicine, but it also presents an extraordinary opportunity for insurers to lead with vision and purpose. By innovating beyond traditional models, insurers have the potential to be agents of change, fostering a future where healthcare is not just reactive, but preventive and sustainable. The challenge of AMR is complex, and the need for protection through comprehensive health insurance has never been clearer. For policyholders, having coverage that anticipates such emerging threats is essential. This is an opportunity for insurers to extend beyond traditional roles, becoming active partners in securing the future of medicine through initiatives aligned with the Insurance for All scheme. By implementing forward-thinking solutions, insurers can protect lives, support healthcare systems, and drive a new era of health security. This isn't just about managing claims - it's about ensuring that effective treatments remain accessible, lives are saved, and that everyone is empowered with the coverage they need in an evolving healthcare landscape.

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The facts and findings presented in this paper have been verified through consultations with medical professionals in India.

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Nidhi is a commerce graduate and an actuarial enthusiast with a robust background in general insurance and consulting. Her experience spans across new product development, IFRS 17 implementation and audits, and developing key performance indicators. Outside of work, she is an avid reader and enjoys playing sports.

Culture

Poem

The Path Less Skewed

Inspired by Robert Frost's renowned poem The Road Not Taken, this actuarial rendition explores the modelling actuary's dilemma: simultaneously navigating multiple stochastic paths and ultimately choosing the one that embodies prudence and foresight.



The Road Not Taken

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I -
took the one less travelled by,
And that has made all the difference.

-Robert Frost

The Path Less Skewed

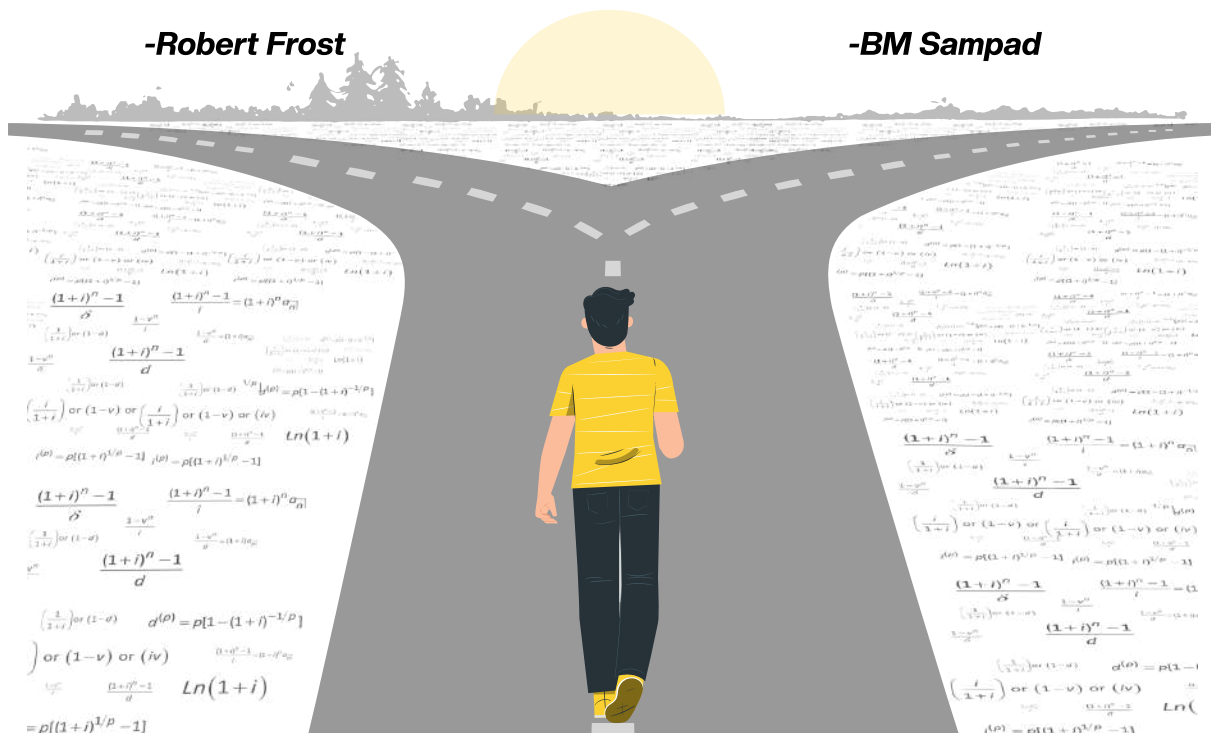
Two paths diverged in the simulations,
And sorry I could not model both,
And be one actuary, long I stood
And gauge each path as well as I could
To where it compounded in its growth.

One path was skewed, its risks untamed,
With volatile twists, and tails that sprawl,
Though it glittered with returns proclaimed
It seemed a road both wild and famed,
The kind from which some profits fall.

Then took I the road that looked more plain
And though it called with subtler yield,
Its balance clear, its curve well-trained-
No heavy tails, no reckless gain-
Its middle ground my course revealed.

And now I sigh, with insight gleaned,
From risk's bright edge, I've firmly steered,
Two paths diverged in models queued,
I chose the one that's less skewed,
And that has made all the difference.

-BM Sampad



Narrated by



B.M. Sampad

Editor-in-Chief
The Actuary India Magazine



Events

Events

Event report

Maiden Webinar On Climate Risk

Reportage by

Kanika Gupta




Speakers session:

- Mr. Piyush Jain, Appointed Actuary, Kshema General Insurance Limited
- Mr. Avanish Banker, Business Actuary, Shriram Life Insurance Company Limited
- Ms. Saigeeta Bhargava - Moderator

Summary :

Actuarial modeling addresses climate risk in agriculture by quantifying the financial impact of extreme weather events, enabling the development of mitigation strategies and tailored insurance solutions to manage risks and ensure sustainability.



Quotable Quotes

"Climate change is one of the most important issues we face currently, but a climate change has a quite narrow definition."



Quotable Quotes

"As a society, we need to have some kind of targets achieved by 2030 to reduce the impacts of climate change and keep it within the boundaries."



Quotable Quotes

"Extreme events can leave a lot of damage for the government and it becomes a big financial burden for that government. For rehabilitation of people and to reconstruct, whatever has been damaged and as an insurance industry, we can provide these trigger-based insurance solutions to the government."



Top Takeaways

Climate change is a major global risk, with rising temperatures and extreme weather events causing significant social and economic impacts, including reduced agricultural productivity and increased disease spread.



Events

Event report Maiden Webinar on Climate Risk

Reportage by
Kanika Gupta



Top Takeaways

Adaptation and mitigation strategies, such as climate-resistant crops, water conservation, and the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), are essential to building resilience and ensuring sustainable agriculture in the face of climate risk.

Top Takeaways

Actuaries play a key role in designing climate risk models and insurance products that help mitigate the financial impact of extreme weather events, such as cyclones, floods, and droughts, on agriculture and other sectors.

Welcome Address by Ms. Saigeeta Bhargava - Moderator

- Ms. Saigeeta Bhargava is a qualified Actuary & Chairperson of Advisory Group for on Climate Risk & Sustainable Finance.
- She began the session with a brief overview of climate risk, highlighting key statistics, its global impact, and the role of actuaries in mitigating this risk.
- She then provided an overview of the session's agenda, which focused primarily on the social and economic impacts of climate risk, with a particular emphasis on the vulnerability of agriculture.
- She introduced the speaker Mr. Avanish Bankar, a qualified Actuary who is Currently working as Business Actuary with Shriram Life Insurance Company, he has experience in pricing, shareholder reporting and business optimization.

Key takeaway of the session are:-

Overview of Climate change:-

- Climate change refers to long-term shifts and alterations in temperature, precipitation, and weather patterns on Earth.
- Climate change occurs due to greenhouse effect caused by excess carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) causing Earth's temperature to rise.
- Climate change is being considered as the highest ranked global risk across the globe. This is one survey conducted by the World Economic Forum.
- It's unique characteristics include:-
 - Far-reaching impact in breadth and magnitude
 - Uncertain and Extended time horizons
 - Foreseeable nature
 - Irreversibility
- Social and Economic impact of climate risk includes -
 - Relocation of whole town
 - Shrinking Productivity of harvests
 - Prices of basic foodstuff and consumer goods will rise
 - Disease will spread due to high temperature
 - Loss of capacity to work due to heat

Evidence of Climate change:-

- The past few decades have seen an increase in extreme weather events worldwide. Rising temperatures lead to:
 - melting ice caps,
 - rising sea levels, and
 - more frequent droughts, floods, and cyclones
 - Increased frequency of heatwaves, forest fire etc.
- By 1960, carbon dioxide concentration reached 320 ppm, whereas in the pre-industrial era, it was around 280 ppm for nearly 6,000 years. However, with the onset of industrialization, this concentration has risen to 420 ppm.
- Climate change risk can be seen as "Boiling Frog Syndrome". The "boiling frog syndrome" is a metaphor used to describe a situation where gradual changes or threats go unnoticed because they happen slowly over time, leading to negative consequences before the problem becomes apparent.

Climate change in India:-

India experienced extreme weather on 93% of the days during the first nine months of 2024, with 255 out of 274 days affected.

Notable events include:

- Cyclone Biparjoy in Gujarat, with an estimated economic loss of ₹1,212.50 Cr.
- Cyclone Amphan in West Bengal, resulting in 14,575 insurance claims totaling ₹1,767 Cr.
- Wayanad landslide in Kerala, where the state incurred an estimated material loss of ₹281 Cr.

The second session was taken by Mr. Piyush Jain

Who has worked with prominent organizations from both general insurance and consulting domains across geographies including UK, Ireland, Middle East, Asia-Pacific, Europe, and India in his decade-long career. He has over 5 years of experience with IFRS 17, including advisory, audit as well as implementation for general insurance companies

He focused primarily on the effects of climate risk on agriculture. Key takeaways are as follow: -

- Agriculture contributes 18% to India's GDP and employs 50% of the workforce.
- Weather disruptions, like changes in temperature, precipitation, and solar radiation, affect the agriculture ecosystem.
- Some key statistics represented via graphical presentation: -
 - When comparing changes in Southwest Monsoon rainfall from the last decade (2012-2022) to the climatic baseline (1982-2011), the Western and Southern India regions saw significant rainfall increases (>30%), while the Indo-Gangetic plains, northeastern India, and Himalayan regions experienced a decrease in rainfall.
 - Changes in Northeast Monsoon rainfall over the last decade (2012-2022) compared to the climatic baseline (1982-2011) show significant increases in both the western and eastern coastal regions, while parts of northern India, especially some Himalayan areas, experienced decreases.
 - Regarding the frequency of heavy rainfall days in the last decade (2012-2022) compared to the climate baseline (1982-2011), the Western and Southern regions saw a significant increase in heavy rainfall, while Northern regions experienced a slight decrease.
- He delved deeper into the graphs illustrating regional vulnerability, highlighting factors such as cyclone proneness, flood proneness, drought proneness, soil water holding capacity, and stages of groundwater development.
- Couple of extreme event example includes - In early September 2024, Vijayawada, a city in Andhra Pradesh, India, experienced severe flooding triggered by exceptionally heavy rainfall that began on August 31, 2024.

Adaption Strategies: -

- National Action Plan on Climate Change (NAPCC) is India's comprehensive framework for addressing climate change, featuring eight core missions focused on sustainable agriculture, enhanced energy efficiency, water conservation, and maintaining ecological balance.
 - National Solar Mission
 - National Mission for enhanced energy efficiency
 - National Mission on sustainable habitat
 - National Mission for sustaining the Himalayan Ecosystem
 - National Mission on Strategic Knowledge for climate change
 - National Mission for sustainable agriculture
 - National Mission for green India
 - National Water mission
- The National Mission for Sustainable Agriculture (NMSA) aims to enhance the climate resilience of Indian agriculture by promoting improved farming techniques, soil health management, and water conservation practices.
- The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) is a centrally sponsored scheme focused on expanding irrigation coverage under the motto "Har Khet Ko Pani" (Water to Every Field) and enhancing water use efficiency through precision irrigation technologies.

Mitigation Strategies

- Climate-resistant crops are specially engineered varieties designed to endure environmental stresses such as drought, floods, heat, and salinity, ensuring food security by enhancing adaptability and resilience in the face of climate change.
- Water conservation involves the efficient use and protection of water resources through techniques like rainwater harvesting, watershed management, and wastewater recycling, aiming to ensure sustainable water availability.
- Organic farming mitigates climate change by sequestering carbon in the soil through practices such as crop rotation, composting, and minimizing synthetic fertilizers, while also reducing greenhouse gas emissions compared to conventional farming.
- Parametric insurance is an innovative risk management tool that offers pre-determined payouts based on measurable parameters (such as rainfall, river depth, or wind speed) instead of actual losses, enabling quick, transparent settlements without the need for loss assessment.

- Financial support for farmers and water-dependent industries includes insurance, subsidies, and loans to manage crop loss and water scarcity.
- Enhances warehouse resilience by safeguarding against such events.
- Pays when Annual Energy Production (APE) is less than decided threshold per year.

About the author(s)



Kanika Gupta

Actuarial Manager
Mercer

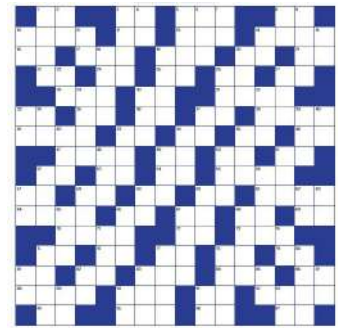
Kanika has spent the past decade specializing in U.S. and Asian Retirement benefits. With extensive experience in pension strategy and risk analysis, she is passionate about helping organizations navigate the complexities of retirement planning. Outside of work, she enjoys watching movies and traveling to new destinations, seeking inspiration and new experiences along the way.

Puzzle

Equation Crossword

Cross-Number Puzzle

Solve these crosswords by filling the correct number in each cell based on the clues provided. Take your time and as many attempts as you want (most importantly, don't give up). These are no more trickier than developing replicating portfolios! Enjoy this brain teaser by the Puzzle master: Kathan Jain.



1	2	3		4	5		6	7	8	9		10	11
12				13			14					15	
16			17			18	19		20		21		
22		23			24		25	26		27		28	29
		30		31	32		33			34		35	
	36			37		38			39		40		
41				42				43			44		
45			46				47	48			49		50
52		53				54				55			56
		57			58			59	60			61	
62	63			64			65				66		
67			68			69	70			71		72	
73		74				75			76		77		78
		80		81	82		83			84		85	
86	87			88		89	90		91	92		93	
94				95					96			97	

ACROSS

1. CCCXXI + CCXLVII
4. $139 - 68$
6. 624×8
10. 5×17
12. $794 - 110$
13. $411 + 434$
14. $7,371 + 2,049$
15. $1,161 - 562$
16. $243 \div 3$
17. 10×2
18. 19×2
20. $2,706 + 2,487$
22. $20,178 \div 6$
24. $2,307 + 1,354$
27. 41×55
30. $4,356 + 4,340$
33. $624 - 308$
34. $73 - 11$
35. $82 - 35$
36. $73 - 24$
37. 612×4
39. 6×6
40. $69 + 50$
41. $43 + 15$

42. $911 - 354$
43. number of dozens in 132
44. $219 \div 3$
45. $26 - 9$
46. $291 \div 3$
47. $732 + 179$
49. $4,807 + 732$
52. 194×38
54. CMXIX
55. 3×5
56. $46 - 6$
57. $6 + 4$
58. $488 \div 8$
59. $245 - 25$
61. $26 + 17$
62. $210 + 29$
64. LXXXIII
65. $16,908 \div 4$
66. $400 \div 5$
67. 3×17
68. $75 - 30$
69. 173×2
71. $3,539 \times 2$
73. $3,419 + 1,770$
75. 82×61

77. $5,169 + 4,146$
80. $24,462 \div 6$
83. $133 - 43$
84. XIX + XLI
85. 12×2
86. $343 - 98$
88. $4,771 + 2,452$
91. $5,104 \div 8$
93. $972 - 438$
94. $584 \div 8$
95. $11,920 \div 4$
96. 2×20
97. DCCLXXXIV

DOWN

1. $3,602 + 2,081$
2. $5,952 + 1,861$
3. $80 + 4$
4. $108 - 34$
5. $1,102 + 431$
6. 7×7
7. $564 \div 6$
8. $1,542 - 617$
9. 67×3
10. $29 + 60$
11. $413 \div 7$
13. $240 \div 3$

15. DXXXII
17. 59×4
19. $7,210 + 1,428$
21. 461×2
23. $903 - 214$
25. $79 - 18$
26. $10 + 6$
28. $3,246 \div 6$
29. $775 - 196$
31. $7,075 + 2,182$
32. $5,160 \div 8$
34. LXVI
36. $43,857 \div 9$
38. XLVII
39. $217 \div 7$
40. CXXXV
41. $871 - 354$
43. $77 \div 7$
44. $428 + 327$
46. $1,779 - 859$
47. 7×13
48. $152 \div 8$
50. 4×860
51. $1,318 - 415$
53. DCCLXXIII - LIV
54. CXXIV - XXXIII

55. $1,172 - 102$
58. $31 + 32$
59. XXII
60. $160 + 67$
62. $2,295 \div 9$
63. $345 - 34$
64. $52 + 33$
65. $2,325 + 2,284$
66. $1,466 - 583$
68. $737 - 247$
69. XXXV
70. XL
72. $302 + 488$
74. $423 + 422$
76. $1,059 + 1,005$
78. 2×619
79. $4 \times 1,361$
81. $547 + 225$
82. 27×27
84. 17×4
86. $135 \div 5$
87. $344 \div 8$
89. $140 \div 5$
90. $44 - 14$
92. 10×3
93. 3×19

About the author(s)**Kathan Jain**

Lead Consultant
Ankolekar & Co.

Kathan is a Fellow member of the IAI and the IFoA with a specialization in Pensions & Other Benefits and holds a B.Sc. in Actuarial Science from YCMOU. He's obsessed with food and enjoys binge-watching & solving puzzles in his free time.

Humour

Humour

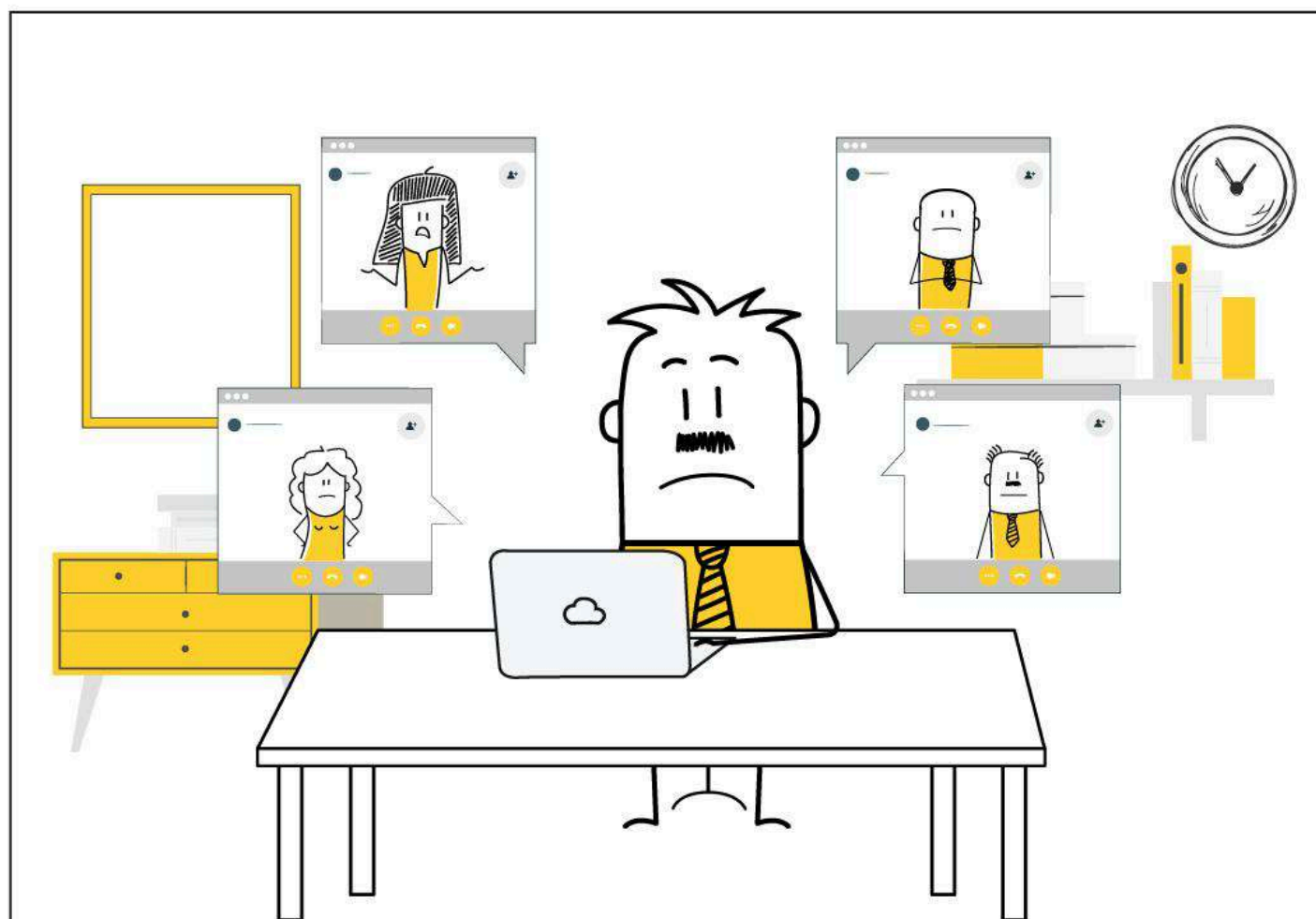
An actuary walks into $\bar{A}$

A light-hearted take on the hopes, aspirations, trials, tribulations and perhaps even foibles of everyday actuaries in their everyday lives.



Call for Volunteers

by B.M. Sampad



"Outrageous! How can they expect volunteers to work? I only signed up to earn CPD credits and to have my name included on the working group's deliverables, so I can promote its activities on my social media feeds."

Humour

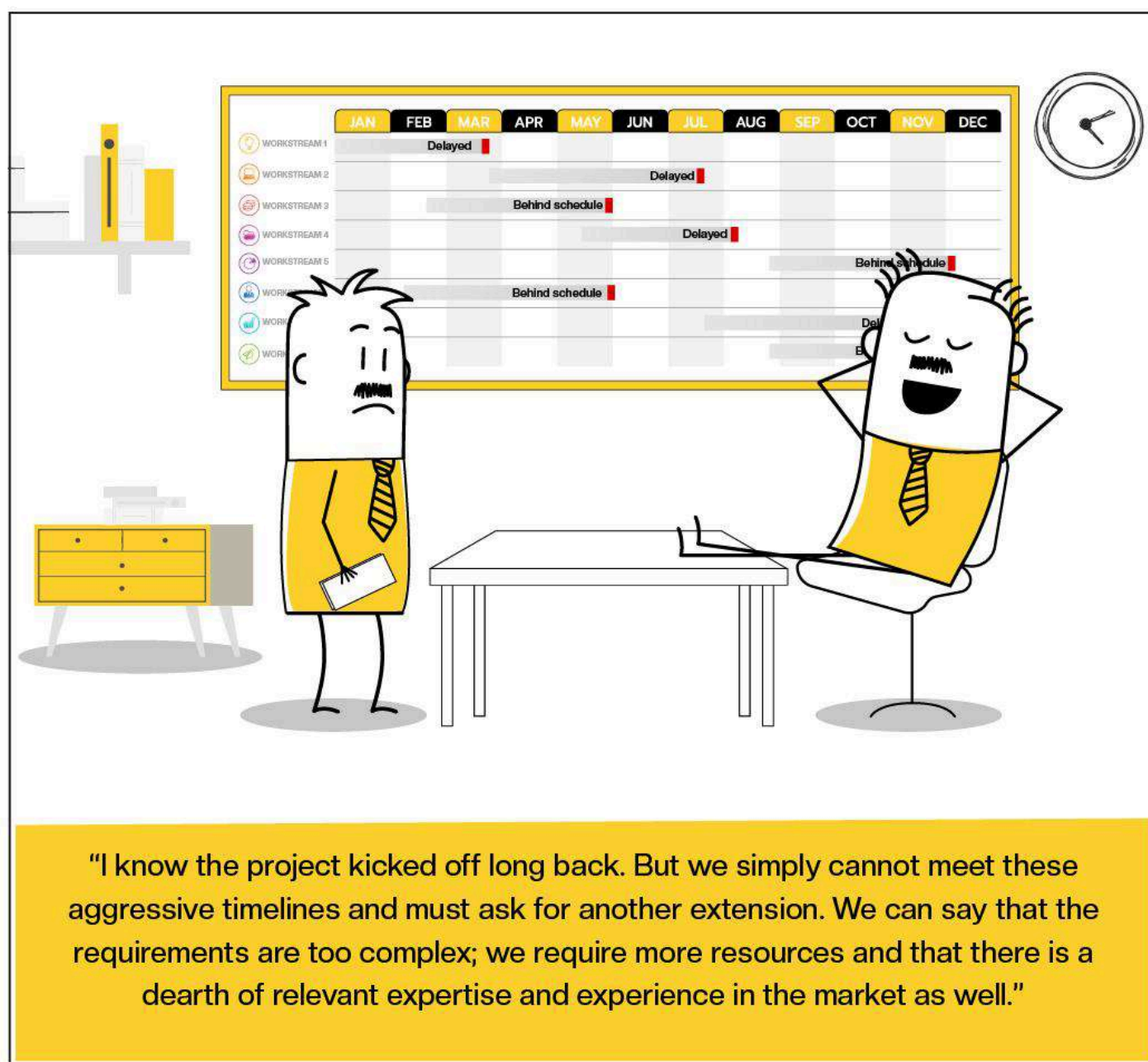
An actuary walks into $\bar{A}$

A light-hearted take on the hopes, aspirations, trials, tribulations and perhaps even foibles of everyday actuaries in their everyday lives.



Meeting deadlines

by B.M. Sampad



Trivia



The Origins of the Ubiquitous "Smiley"



B.M. Sampad

Editor-in-Chief
The Actuary India Magazine

From An Insurance Company Corporate Communication Strategy for an M&A to a Global Emoticon! In the annals of insurance history, one would not expect the genesis of the world-renowned "smiley" face to emerge. Yet, in a twist of fate that intertwines corporate mergers and artistic ingenuity, would you imagine that the iconic symbol was born within the corridors of an insurance firm!

The year was 1963, and the State Mutual Life Assurance Company of Worcester, Massachusetts, now known as Hanover Insurance, had just acquired the Guarantee Mutual Company of Ohio. The merger, rather than being a harbinger of new beginnings, cast a shadow over employee morale. The challenge was clear: how to rejuvenate the spirits of a dispirited workforce.

Enter Harvey Ball, a freelance artist with a flair for simplicity and impact. Tasked with creating a symbol to uplift the employees, Ball found himself brainstorming an image that could foster a sense of optimism and unity. After some contemplation, he sketched a sunny-yellow circle with a simple smile. Aware of the potential for the design to be misinterpreted if inverted, he added two eyes to ensure the message remained unequivocally positive. Thus, the smiley face was born.

Astonishingly, this now-ubiquitous symbol took Ball a mere ten minutes to create, and for his effort, he was compensated with \$45—a modest sum by today's standards, considering the global impact of his creation.

State Mutual's initial concept was to distribute 100 button pins featuring the smiley face to encourage employees to smile while on the phone and during daily tasks. However, the response was overwhelming. The demand for these pins skyrocketed, and soon, the smiley face transcended its initial corporate confines, capturing the hearts of the public at large.

Its journey from an insurance company's morale-boosting tool to a worldwide symbol of happiness and goodwill is a testament to its universal resonance.

Interestingly, Ball never trademarked the design, a decision that allowed the smiley face to proliferate without legal constraints. This democratization of the symbol meant that it could be adapted and adopted across cultures and contexts, eventually finding a home in the digital age as a common emoticon.

So, the next time you see a smiley face, whether in an email, a text message, or a social media post, remember its humble origins within an insurance company. A symbol created to uplift employees during a corporate transition has become a global icon of happiness, demonstrating that sometimes, the simplest solutions can have the most enduring legacies.



"SMILE," THEY SAID, AND NATIONWIDE CRAZE STARTED
Joy Young and Harvey Bell Designed Button as Employee Cheer-Builder
—AP Wirephoto

Nation in quest of symbol takes 'smile' pin to heart

WORCESTER, Mass. (AP) — No one is quite sure of the origin of the smile buttons — those simple yellow disks with dot eyes and a curved line mouth — but two affiliated insurance companies are claiming credit.

The buttons have become a national rage, appearing on everything from suit lapels to sweat-shirts and women's underwear.

Joy P. Young, an assistant director of sales promotion with Worcester Mutual Fire Insurance Co. and Guarantee Mutual Assurance Co. of America, says the buttons were first developed in December 1963 as part of a campaign to increase cheerfulness and helpfulness among the companies' employees.

She took her idea of a

smile button to Harvey Ball, a commercial artist in Worcester, and together they came up with a design strikingly like the one seen everywhere today.

Worcester Mutual and Guarantee Mutual ordered 100 of the "smiles," for distribution to employees in the home office and in the field.

A company publication of February 1964 shows firm President John Adams Jr. wearing the smile button.

It wasn't too long, Mrs. Young said, before requests for the buttons started trickling in from company customers, kids and even other firms. By 1969 the trickle had become a flood and the two firms curtailed distribution, with costs soaring to 5 cents a button.

Mrs. Young's theory why the "smiles" caught on: "It's psychological. I think people are looking for symbols. People have become button conscious in recent years. They are a form of self-expression. Not too many of the other buttons were happy ones, but ours is."

Two Philadelphia novelty manufacturers — Murray and Bernard Spain — claim credit for introducing the benign smile button to the market. The idea has been assumed since by other merchandisers, but the Spains regard certain variations, among them the caption "Have a Happy Day," as their own.

**FINAL
DAYS**

Newsflash

Industry Updates - A roundup of November 2024 news on Indian insurance sector

What's been happening in the insurance sector? **Kapil Gupta** and **Preet Khandelwal** are here to bring you the full update of November 2024.



News Report

04 Nov 2024

General Insurance

Govt spends Rs 1.1-L crore on free hospitalisation under PM-JAY

Since its launch in September 2018, the Pradhan Mantri Jan Arogya Yojana (PM-JAY) has provided over Rs 1.1 lakh crore in free hospitalization benefits to beneficiaries, significantly enhancing healthcare accessibility for India's most vulnerable populations. According to the official data, more than 79 million individuals have benefited from PM-JAY scheme, which provides an annual health cover of Rs 5 lakh. The scheme was made available for 107 million poor households in the country since September 2018, covering the bottom 40 percent of India's population.

[Read more](#)



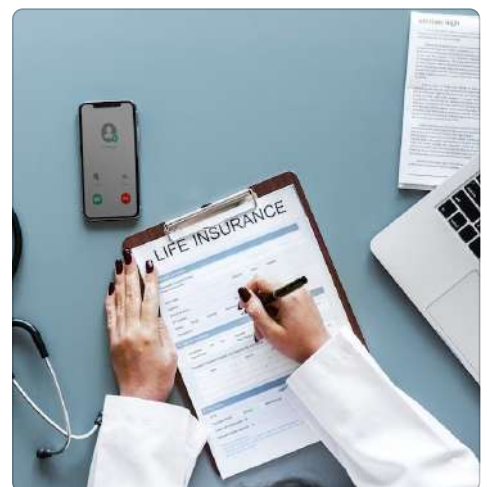
06 Nov 2024

Life Insurance

Fedo.ai partners with Canara HSBC Life Insurance for AI-enabled non-invasive health assessments

Canara HSBC Life Insurance (CHLI) has partnered with health-tech company Fedo.ai to introduce AI-powered non-invasive health assessments using facial scan technology. This collaboration allows customers to perform quick, 14-second health scans from their homes, streamlining underwriting processes and enhancing accessibility, especially in remote areas. The partnership emphasizes personalized healthcare, informed decision-making, and faster, more efficient insurance services, with a strong focus on data privacy and user convenience.

[Read more](#)



07 Nov 2024

General Insurance

Health insurance premiums expected to grow to US\$23.7 billion by FY2028

Total health GDPI is expected to reach up to INR2.0 trillion (\$23.7 billion) by the financial year ending 31 March 2028 (FY2028), according to Bupa Niva Health Insurance in its draft red herring prospectus as the insurer launches an initial public offer.

[Read more](#)


07 Nov 2024

General Insurance

SC's LMV ruling may drive up loss ratio of insurers

The supreme court's ruling permitting light motor vehicle (LMV) licence holders to drive transport vehicles may result in a rise in motor insurance claims, likely driving up loss ratios for general insurers. A Constitution Bench of the Supreme Court on Wednesday held that a person holding a LMV driving licence is also entitled to drive a transport vehicle with an unladen weight of up to 7,500 kg.

[Read more](#)


07 Nov 2024

Life Insurance

General Insurance

IRDAI to Amend Regulatory Sandbox Norms after Committee Recommendation

The Insurance Regulatory and Development Authority of India (Irdai) has proposed amendments to its regulatory sandbox norms, shifting from a rule-based to a principle-based approach to encourage innovation across the insurance value chain. Regulatory sandboxes allow for live testing of new products or services in a controlled environment with possible regulatory relaxations. Irdai has issued an exposure draft seeking public comments on these proposed amendments by November 25, aiming to foster the adoption of innovative ideas and concepts in the insurance sector.

[Read more](#)


08 Nov 2024

Life Insurance

General Insurance

Irdai Chairman Debasish Panda pitches for 100% foreign direct investment in insurance sector

IRDAI Chairman Debasish Panda advocated for 100% foreign direct investment (FDI) in the insurance sector, emphasizing the need for significant capital to achieve "insurance for all" by 2027 and support India's vision of becoming a developed nation by 2047. He highlighted that opening the sector to full FDI would attract more players, reduce dependency on domestic investments, and encourage foreign insurers to operate independently without Indian partners. Additionally, Panda underscored the transformative potential of Bima Sugam, a digital platform designed to streamline policy access and transactions for customers and distributors, enhancing efficiency and transparency in the insurance ecosystem.

[Read more](#)

09 Nov 2024

Life Insurance

General Insurance

LIC to finalise stake buy in health insurance firm in FY25

LIC's MD and CEO, Siddhartha Mohanty, announced that the company plans to acquire a stake in a standalone health insurer within the current financial year. The decision will depend on various factors, including the valuation of the company, and once the groundwork is complete, LIC will seek board approval to enter the health insurance sector. This move follows a recommendation for composite insurance licenses to reduce costs and regulatory burdens for insurers, as life insurance companies are currently limited to offering only extended health insurance benefits.

[Read more](#)

11 Nov 2024

Life Insurance

No plan to bring claw back clause, says LIC MD & CEO Siddhartha Mohanty

Life Insurance Corporation of India (LIC) has revised its commission structure for distributors in line with new surrender value norms, reducing first-year commissions but increasing renewal premiums. The insurer launched 32 new products under the revised norms and has no plans to introduce a "clawback" clause for agents' commissions. Additionally, LIC is preparing to enter the bond forward rate agreement (FRA) market, engaging with several banks to offer guaranteed returns to policyholders.

[Read more](#)

12 Nov 2024

General Insurance

Shriram General Insurance partners with the Muthoot Group to enhance access to general insurance solutions

Shriram General Insurance Company (SGIC) has entered a strategic partnership with The Muthoot Group, enabling Muthoot Securities Ltd's customers to easily purchase SGI's general insurance policies via an intuitive online platform.

[Read more](#)

12 Nov 2024

Life Insurance

General Insurance

6.5 lakh senior citizens join Ayushman Bharat scheme after recent expansion

In just eleven days since the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY) was expanded to include individuals aged 70 and above, the scheme has seen a surge in enrollments from elderly beneficiaries. According to data from the National Health Authority, nearly 6.5 lakh elderly individuals have enrolled and received Ayushman cards within this period.

[Read more](#)

15 Nov 2024

General Insurance

Indian general insurance sector logs 27.53 percent growth in Oct. Four insurers log three digit growth

The Indian general insurance sector logged 27.53 percent gross direct premium growth last month with four players registering a three digit growth as compared to the previous year's corresponding period.. The four general insurers who have logged a three digit premium growth are – National Insurance Company (premium Rs.2,488.12 crore, growth 156.70 percent), Bajaj Allianz General Insurance Company (Rs.3,859.72 crore, 109.86 percent), Kshema General Insurance (Rs.272.86 crore, 278.29 percent) and Agriculture Insurance Company of India (Rs.1,761.03 crore, 200.30 percent).

[Read more](#)

16 Nov 2024

Life Insurance

General Insurance

IRDAI looks at new supervision norms

Irda is preparing to implement a new supervisory system for insurance companies, focusing on risk management and adopting a risk-based supervisory framework (RBSF) to enhance regulatory oversight. The discussions at the 8th Bima Manthan summit also highlighted the progress of the Bima Sugam digital platform and the importance of cybersecurity in modernizing the industry. Additionally, expanding insurance penetration and exploring new capital avenues, including encouraging insurance companies to go public, were key topics in line with the goal of "Insurance for All by 2047."

[Read more](#)

18 Nov 2024

Life Insurance

General Insurance

Government Plans 100% FDI, Eased Rules for Agents in Insurance Bill Tweak

The government is set to allow 100% foreign direct investment (FDI) in the insurance sector and lift restrictions on individual agents, enabling them to sell policies from multiple companies. These measures are part of the proposed Insurance Amendment Bill, which aims to boost insurance penetration in India, currently at just 4%. The amendments also include allowing composite licenses for insurers to offer both life and non-life coverage, easing solvency requirements, and enabling larger foreign players to enter the market independently.

[Read more](#)

21 Nov 2024

General Insurance

Online motor insurance sees 70 percent jump in tier-2 cities, 110 percent in tier-3 areas: Policybazaar

The online motor insurance landscape in India has seen growth over the last three years, with tier-2 and tier-3 cities leading the charge. According to data from Policybazaar, the increasing digital penetration, better internet access, and growing awareness about the affordability of online insurance have spurred adoption in these regions, while electric vehicles (EVs) are driving a pivotal shift toward sustainable, digital-first solutions.

[Read more](#)

21 Nov 2024

Life Insurance

ICICI Prudential Life Insurance Company plans to acquire minor stake in Bima Sugam India Federation

ICICI Prudential Life Insurance has approved an investment of up to 10% in Bima Sugam India Federation, which aims to create a centralized marketplace for insurance products and services. This initiative aligns with IRDAI's efforts to expand insurance access and improve customer experience, contributing to the goal of "Insurance for All" by 2047.

[Read more](#)

23 Nov 2024

General Insurance

ICICI Lombard buys 0.19 percent stake in HDFC Life

Promoters held 50.34 percent stake in HDFC Life Insurance Company as of the end of September 2024. Promoters held 51.66 percent stake in ICICI Lombard General Insurance Company as of the end of September 2024.

[Read more](#)


25 Nov 2024

General Insurance

Liberty General Insurance partners with Profectus Capital to empower MSME Enterprises

Liberty General Insurance has partnered with Profectus Capital to support Micro, Small, and Medium Enterprises (MSMEs) by providing them with access to tailored insurance solutions. This collaboration aims to enhance financial security for businesses, allowing them to focus on growth and sustainability with peace of mind.

[Read more](#)


26 Nov 2024

Life Insurance

Life insurers may rethink bancassurance strategy

Recent remarks by the finance minister and the Irdai chairman about "mis-selling" insurance products through banks are pushing life insurers to reassess their commission structures and explore alternative distribution channels beyond bancassurance, which currently accounts for over half of the industry's business. While bancassurance remains a cost-effective channel, insurers may focus more on agency, broker, and direct digital channels to reduce dependence on banks and curb mis-selling issues, such as those affecting elderly customers and persistency ratios. The shift away from bancassurance, however, will be challenging, especially for companies heavily reliant on this channel, like SBI Life and HDFC Life.

[Read more](#)


27 Nov 2024

General Insurance

Kerala to launch insurance scheme to cover entire cattle population

Kerala is set to launch a comprehensive insurance scheme benefiting the entire cattle population in the State, said J Chinchurani, the State Dairy Development and Animal Husbandry Minister.

[Read more](#)

28 Nov 2024

Life Insurance

General Insurance

Bima Sugam is a game-changer, says Irdai chairman Debasish Panda

The Insurance Regulatory and Development Authority of India (IRDAI) is launching Bima Sugam, a digital platform aimed at transforming the insurance sector by offering a one-stop marketplace for purchasing, managing, and comparing insurance policies across life, health, and general insurance. This platform, expected to democratize insurance in India, will help consumers make informed choices while enabling distributors to sell more products efficiently with the help of digital tools like Aadhaar and UPI integration. IRDAI's Chairman, Debasish Panda, also advocated for considering 100% foreign direct investment (FDI) in the insurance sector to attract more global players and investments.

[Read more](#)

Industry trends

01 Nov 2024

Life Insurance

General Insurance

India sees surge in insurance adoption

Awareness of insurance benefits is growing in rural India, with the number of rural households taking insurance increasing sharply, especially in vehicle and crop insurance. The PM Fasal Bima Yojana, the largest crop insurance scheme for farmers, has seen significant growth, though issues with claim settlements and implementation persist. Wealthier farmers are more likely to adopt crop insurance due to better access to credit and liquidity, while smaller farmers face challenges managing premiums, which is compounded by delays and disputes in the PMFBY scheme.

[Read more](#)



06 Nov 2024

General Insurance

Foreigners in India buying insurance climbs 50%

NRI insurance purchases have seen a significant rise, with a 50% increase in customer base across term, health, and investment-linked products, particularly in markets like the UAE, US, and Saudi Arabia. Female policyholders among NRIs have grown from 4% to 11%, highlighting increasing financial independence, while health insurance demand has surged, especially for global coverage and outpatient care. NRI investment in Unit-Linked Insurance Plans (ULIPs) has also grown by 50%, with a strong interest in high returns from Indian equity markets, particularly from the UAE and US/Canada.

[Read more](#)



11 Nov 2024

Life Insurance

New biz premium of life insurers rises 13% in October, shows data

In October 2024, life insurance companies in India reported a 13.16% year-on-year (YoY) increase in new business premiums (NBP), reaching Rs 30,347 crore, driven by strong growth from private insurers. While state-owned LIC saw a 9.48% YoY rise in premiums, private insurers reported an 18% increase in NBP. Despite this, the number of policies sold fell sharply, dropping by 46% in October and 5.42% year-to-date, partly due to the new surrender value regulations implemented in October.

[Read more](#)

12 Nov 2024

Life Insurance

Bajaj Allianz Life sees 23% growth in gross written premium, expands market share

Bajaj Allianz Life Insurance reported strong growth in the second quarter of FY2024, with a 34% increase in Individual Rated New Business (IRNB) and a 14% rise in New Business Premium, reaching ₹3,202 crore. The company also saw a 23% increase in Gross Written Premium, totaling ₹6,544 crore, and grew its market share to 8.9% in the private sector. With a 25% rise in assets under management (AUM) and a net profit of ₹148 crore, Bajaj Allianz Life continues to expand its presence in Tier 2 and Tier 3 markets, focusing on enhancing its product suite and digital ecosystem.

[Read more](#)

15 Nov 2024

Life Insurance

General Insurance

India's insurance sector outpaces China, Thailand: McKinsey

India's insurance sector experienced an 11% compound annual growth rate (CAGR) from FY2020-23, surpassing growth rates in Thailand and China, with the life insurance industry reaching \$107 billion and general insurance at \$35.2 billion. Despite this growth, India's insurance penetration decreased from 4.2% in 2022 to 4% in 2023, signaling that progress hasn't kept up with economic growth, and private life insurers reported low profit growth due to rising operational costs. McKinsey's report suggests that expanding insurance penetration could save the government \$10 billion annually and help reduce the financial burden on families affected by accidents or crop losses.

[Read more](#)

19 Nov 2024

Life Insurance

Term Insurance Purchases Among Self-Employed Rise By 50% YoY

The self-employed demographic has seen a 50% year-on-year increase in term insurance purchases, driven by specialized plans that simplify the application process by using digital metrics instead of traditional income proofs. A significant portion of the growth comes from millennials (ages 27-38), who make up 74% of new policyholders, with a trend towards securing life insurance coverage that is 10 times their annual income. Additionally, there is an increase in female participation and a geographical spread of term insurance purchases across major cities like Mumbai, Delhi, and Bangalore, reflecting a broader shift toward financial planning within the self-employed sector.

[Read more](#)

21 Nov 2024

Life Insurance

General Insurance

India insurtech firms make big strides, post 12x revenue growth in 5 years

The Indian insurtech sector experienced significant growth, with a 12-fold revenue increase to \$750 million in 2023, largely driven by the top nine startups. Despite a global decline in insurtech funding, India's sector remains resilient, with over 150 insurtech companies, including unicorns like Policybazaar and Acko, and numerous "minicorns" valued under \$100 million. The report highlights opportunities for insurtechs to expand in India's health insurance market and leverage data for underwriting and claims, particularly through partnerships with SMEs and corporates to reach smaller towns and offer comprehensive health and wellness solutions.

[Read more](#)

Industry trends

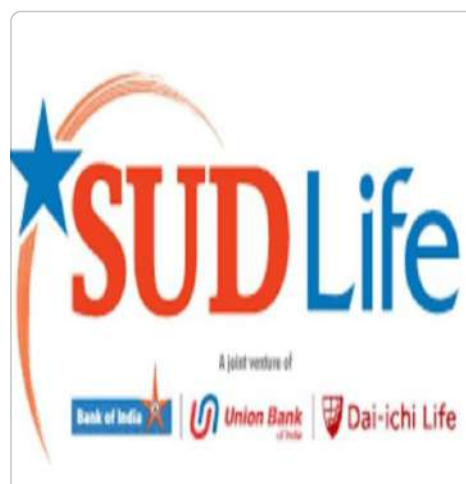
1. Star Union Dai-ichi Life Insurance Co. Ltd. (SUD Life)

30 Nov 2024

Life Insurance

SUD Life launches new ULIP funds to play the India growth story and create wealth for policyholders

Star Union Dai-ichi Life Insurance (SUD Life) has launched two new funds as part of its Unit Linked Insurance Plan (ULIP) offerings: the Viksit Bharat Fund and the New India Leaders Fund. The Viksit Bharat Fund focuses on businesses driving long-term development across various sectors in India, while the New India Leaders Fund targets technology-led innovation and emerging business themes like energy transition and AI. Both funds aim to provide long-term wealth creation opportunities for policyholders and are available under multiple SUD Life products, with plans to offer them across all ULIP plans.

[Read more](#)

2. Tata AIG

06 Nov 2024

General Insurance

Keep health cover comprehensive and contemporary by adding riders

Tata AIG General Insurance recently introduced five new riders that can be purchased with its health insurance policies that provide more than 60 benefits to customers. Health and general insurers alike are increasingly expanding their suite of riders. "By purchasing a rider, a customer can get additional features and benefits that are not part of the main policy.

[Read more](#)

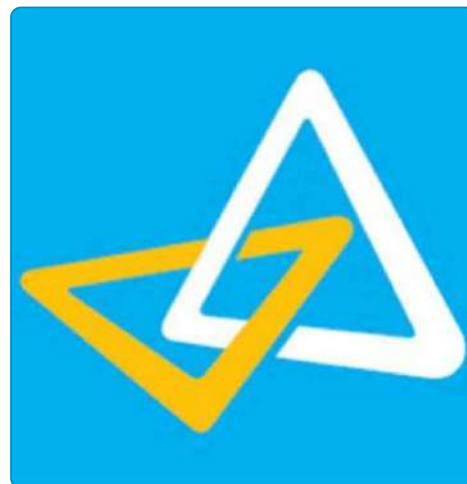
3. Canara HSBC Life Insurance

07 Nov 2024

Life Insurance

Canara HSBC Life Insurance introduces India Manufacturing Fund

Canara HSBC Life Insurance has launched the India Manufacturing Fund under its ULIP range, with subscriptions open until November 21, 2024, at an NAV of Rs 10. This fund aims to generate long-term capital appreciation by investing in equity and equity-related securities of companies in India's manufacturing sectors, such as Automobiles, Defence, and Healthcare, while offering financial security through its life insurance component. Benchmarked to the Nifty India Manufacturing Index, the fund follows a structured asset allocation strategy with 60%-100% equity exposure, aligning with India's growth story in manufacturing and industrial sectors.

[Read more](#)

About the author(s)



Kapil Gupta

Actuarial Analyst
Willis Towers Watson

Kapil is an actuarial student specializing in life insurance. He has hands-on experience in reserving and valuation under the Solvency II and IFRS17 regimes for a UK-based life insurer. In his free time, he enjoys reading and exploring new ideas.



Preet Khandelwal

Actuarial Analyst
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Preet is an aspiring actuary with strong background in general insurance reserving. He is involved in multiple Reserving projects for EMEA clients. In his free time, he likes to binge watch movies and web series.

27 Nov 2024

General Insurance

Kerala to launch insurance scheme to cover entire cattle population

Kerala is set to launch a comprehensive insurance scheme benefiting the entire cattle population in the State, said J Chinchurani, the State Dairy Development and Animal Husbandry Minister.

[Read more](#)

28 Nov 2024

Life Insurance

General Insurance

Bima Sugam is a game-changer, says Irdai chairman Debasish Panda

The Insurance Regulatory and Development Authority of India (IRDAI) is launching Bima Sugam, a digital platform aimed at transforming the insurance sector by offering a one-stop marketplace for purchasing, managing, and comparing insurance policies across life, health, and general insurance. This platform, expected to democratize insurance in India, will help consumers make informed choices while enabling distributors to sell more products efficiently with the help of digital tools like Aadhaar and UPI integration. IRDAI's Chairman, Debasish Panda, also advocated for considering 100% foreign direct investment (FDI) in the insurance sector to attract more global players and investments.

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Announcements

INVITATION FOR BIDS

Appointment of the Actuaries for Valuation of Reserve Bank of India's liability towards Staff Superannuation Funds

Quotations are invited under Two Bid system (Technical & Financial Bid) for above mentioned work for financial year 2025-26 as per undermentioned frequency.

Year	Valuation as on		Frequency of valuation			
2025-26	Sep 30, 2025	Mar 31, 2026	Aug 2025	Sep 2025	Feb 2026	Mar 2026

In addition to the above, the actuaries will be required to provide budget estimates towards Staff Superannuation Funds for financial year 2026-27.

For full details, please refer to the document containing terms and conditions shared with the Institute of Actuaries of India.

For further details, please contact:

Corporate Strategy and Budget Department
Reserve Bank of India
Main Office Building
Fort, Mumbai 400001
E-mail ID: csbdfunds@rbi.org.in
Contact: 022-22603315 / 022-22603286

The last date for submission of Technical and Financial Bid is **January 17, 2025 before 2-00 P.M.**

Place: Mumbai
Date: December 24, 2024

Chief General Manager
Reserve Bank of India
Corporate Strategy and Budget Department
Mumbai

Our Team



Kunj Behari Maheshwari

Chief editor

Kunj Behari Maheshwari is a partner at Willis Towers Watson Actuarial Advisory LLP and the Head of Life Insurance consulting for India and Sri Lanka within WTW's Insurance Consulting and Technology division.

He is passionate about actuarial work, research and volunteers regularly towards initiatives at the IAI. He enjoys swimming and being outdoors.



Prakhar Mody

Editor

Prakhar is a qualified actuary with extensive experience in financial risk management and technology transformations having worked with banks, insurers, financial institutions and corporate clients across the globe.

He is also an avid gamer with an interest in fictional novels and trekking.



Anirudh Bansal

Editor

Anirudh is the founder of InsurTech Actuary and is a General Insurance Actuary. He is passionate about microinsurance, innovation and InsurTech startups.



Rajeshwarie Iyer

Editor

Rajeshwarie Iyer is working as the VP, Head Specialty Bangalore for SwissRe Global Business Solutions. She is a Fellow of the Institute of Actuaries of India and the Institute and Faculty of Actuaries UK. Rajeshwarie has worked in General Insurance in reserving, pricing and regulatory reporting and is currently underwriting reinsurance.

She volunteers actively for the profession and is a classical dancer who enjoys swimming, blogging and reading.



Kathan Jain

Editor

Kathan works at Ankolekar & Co. as a senior associate. He's obsessed with food and enjoys binge-watching & solving puzzles in his free time.



Ekta Mehta

Editor

Ekta Mehta is an associate actuary currently involved in with-profits and experiences analysis-related tasks throughout the year. She spends her free time solving large-sized jigsaw puzzles, volunteering in several actuarial capacities and helping young adults to enhance their communication, speech & drama skills.



The Institute of Actuaries of India (IAI) is a statutory body established under The Actuaries Act 2006 (35 of 2006) for regulating the profession of Actuaries in India. The provisions of the said Act have come into force from the 10th day of November 2006, in terms of the notification dated 8th November 2006, issued by the Government of India in the Ministry of Finance, Department of Economic Affairs.

The Actuary India is the flagship magazine of the IAI that has been in publication for over two decades. We aim to provide our members and the larger actuarial community a platform to connect, exchange views and promote thought-leadership and research beneficial to the profession.

www.theactuaryindia.org

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