

Health Cadre Equity, Skill Development, and Primary Healthcare Strengthening in Assam: A Constitutional, Evidence-Based Policy Framework for Reducing Preventable Mortality

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ABSTRACT

Background:

Systematic analysis of 2,578 deaths in Kamrup District, Assam (2020–2024) through IDSP surveillance identifies 696 deaths (27.0%) as preventable at the primary healthcare level through evidence-based interventions. Paradoxically, these deaths occurred despite the presence of 89 Sub-Centers, 18 PHCs, 4 CHCs, Model Hospitals, and a District Hospital indicating not infrastructure absence but systematic organizational failures in prevention, early detection, health education, and chronic disease management. Central to these failures is a structural inequity in Assam's bifurcated healthcare cadre system: Health Cadre A doctors (serving at Sub-Centers through District Hospitals, providing 70–80% of all healthcare encounters) face systematic barriers to skill development, continuing medical education, research degree recognition, and professional development; barriers that Health Cadre B doctors (Medical College faculty) do not experience. This inequity directly contributes to preventable mortality.

Objectives:

This policy paper analyzes: (i) the quantified mortality evidence for primary care system failures in Kamrup District; (ii) the structural inequities between Health Cadre A and B in research recognition, skill development access, and professional support; (iii) constitutional provisions and Supreme Court jurisprudence establishing right to health and professional development; (iv) comparative analysis with Kerala's primary healthcare model; (v) NMC regulatory framework for additional qualifications; and (vi) a comprehensive reform framework for primary healthcare strengthening through equitable professional development support.

Key Findings:

696 primary-preventable deaths over five years represent a ₹95.57 crore economic burden for Kamrup District (₹2,230 crore extrapolated to Assam). Young-adult strokes from uncontrolled hypertension (n=551, 79.2% of primary-preventable deaths) represent the largest preventable category directly attributable to absent NCD screening and follow-up systems at PHC level. Health Cadre A doctors who provide the overwhelming majority of healthcare delivery in Assam systematically lack formal training in NCD management, public health, behavioral health, and community medicine, yet face regulatory obstacles when they proactively acquire these skills through legitimate institutions. This creates a perverse incentive structure that discourages professional development precisely where it is most needed.

Conclusions:

Constitutional provisions (Articles 21, 47) and Supreme Court jurisprudence establish unambiguous state obligations to ensure healthcare quality and healthcare worker professional development. Systematic inequities between Health Cadre A and B in research recognition and professional development opportunities violate principles of equity embedded in the Constitution. The proposed Sewa Setu portal-based database solution, NMC-compliant skill development course recognition framework, and comprehensive primary healthcare strengthening strategy provide actionable, legally sound pathways for systemic reform. Assam's snakebite management success demonstrates the transformative potential of systematic physician training.

KEYWORDS: *Health Cadre A; Health Cadre B; Primary healthcare strengthening; Skill development; NMC compliance; Preventable mortality; Sewa Setu portal; Constitutional right to health; Article 21; Article 47; Kerala model; IGNOU; NIHF; Snakebite management; Assam*

1. PREVENTABLE MORTALITY: THE EVIDENCE IMPERATIVE FOR PRIMARY HEALTHCARE REFORM

1.1 Magnitude and Distribution of Primary-Preventable Deaths

The mortality analysis of 2,578 deaths in Kamrup District (2020–2024) provides definitive, quantified evidence of systematic primary healthcare delivery failures. The 696 deaths classified as preventable at primary level (27.0% of total mortality) constitute a substantial, measurable, and critically addressable public health burden that can be substantially reduced through systematically implementable evidence-based interventions.

The distribution of primary-preventable deaths reveals an ordered hierarchy of system failures: cerebrovascular accidents in adults under 60 years (n=551, 79.2%), representing hypertension and diabetes undetected or uncontrolled at primary level; undetermined/uncertified causes (n=80, 11.5%), representing death certification system failures; COVID-19 in unvaccinated individuals despite vaccine availability (n=45, 6.5%), representing health education and community mobilization failures; alcohol-related liver disease in working-age adults (n=15, 2.2%), representing behavioral health service gaps; and early cardiac deaths from uncontrolled risk factors (n=5, 0.7%).^{1,2}

The temporal trend across the five-year study period; primary-preventable deaths increasing from 24.5% in 2020 to 51.9% in 2024 as a proportion of total deaths reflects both improving tertiary care capacity and proportionally worsening primary prevention failures. As tertiary care improves, the relative burden attributable to primary care failures increases, amplifying the urgency of primary healthcare system strengthening.

1.2 Economic Burden: The Financial Argument for Investment

The economic burden of 696 primary-preventable deaths totals ₹95.57 crores for Kamrup District over five years (₹19.11 crores annually), comprising direct healthcare costs (₹34.8 crores), productivity loss (₹51.17 crores for working-age deaths), and indirect costs (₹9.6 crores).³ Extrapolating to Assam State's 35.6 million population yields ₹2,230 crores over five years; a massive, quantifiable economic loss primarily attributable to primary healthcare system failures.⁴

The cost-effectiveness argument for primary healthcare investment is compelling: implementing systematic NCD screening programs at PHCs (estimated cost ₹500–800 per person screened annually), maintaining antihypertensive and antidiabetic medications in supply chains (₹200–500 per treated patient annually), and training medical officers in NCD management (one-time cost ₹50,000–150,000 per physician) could prevent the majority of 551 young-adult stroke deaths; an annual economic saving of ₹11–15 crores per year for Kamrup District alone, representing a return on investment exceeding 10:1 for primary prevention expenditure.

2. HEALTH CADRE STRUCTURE: BIFURCATION, INEQUITY, AND CONSEQUENCES

2.1 Health Cadre A: The Healthcare Delivery Backbone

Health Cadre A encompasses Assam's primary and secondary healthcare infrastructure: 89 Sub-Centers (Arogya Mandirs), 18 Primary Health Centers, 4 Community Health Centers, Model Hospitals, and District Hospitals. These facilities collectively provide an estimated 70–80% of all patient-provider encounters in Assam; the vast majority of routine outpatient consultations, all normal deliveries in government facilities, the entirety of immunization coverage, disease surveillance and outbreak detection, implementation of NCD screening programs, family planning services, and maternal-child health programs.⁵

Health Cadre A doctors follow a career progression from Medical & Health Officer Grade-I (entry) through Senior Medical Officer, Sub-Divisional Medical Officer, Chief Medical Officer of Communicable Diseases, to Joint Director with a critical transformation at SDMO level from primarily clinical to predominantly administrative and program management functions. This administrative transition requires competencies in health program planning, budget management, human resource management, monitoring and evaluation, inter-sectoral coordination, health information systems, and policy implementation that are entirely absent from the MBBS curriculum and not provided through any systematic in-service training.⁶

2.2 Health Cadre B: Institutional Support and Research Infrastructure

Health Cadre B Medical College faculty and teaching hospital clinicians operate within environments providing systematic support for professional development: structured postgraduate and super-specialty training programs (MD/MS/DM/MCh); access to research infrastructure (laboratories, library subscriptions, research databases, biostatistics support); institutional ethics committees; protected research time; mentorship from senior academicians; funding through institutional research grants; collaborative networks with national and international institutions; and full recognition of research degrees (PhD, DSc) obtained from any UGC-recognized institution.

This support infrastructure enables Health Cadre B doctors to contribute substantially to medical knowledge through research, publication, and academic advancement. The system appropriately values and rewards this contribution. The fundamental inequity is not that Health Cadre B doctors receive support - they should, and their research contributions are essential. The inequity is that Health Cadre A doctors, working in facilities generating the overwhelming majority of India's healthcare delivery data and serving the most economically and socially vulnerable populations, receive no comparable infrastructure, support, or recognition for professional development.

2.3 The Research Recognition Crisis: Regulatory Contradiction

The most acute manifestation of Health Cadre A professional development inequity is the paradox confronting doctors who proactively acquire additional qualifications from legitimate institutions. When a PHC medical officer completes a PhD from a UGC-recognized university through rigorous research addressing real-world healthcare delivery challenges; or earns a DSc through systematic epidemiological investigation generating original public health contributions; or obtains a postgraduate diploma in public health from NIHFV or CMC Vellore - these legitimately earned qualifications should represent professional achievements to be celebrated, recognized, and rewarded as indicators of commitment to healthcare quality improvement.

Instead, these doctors face a regulatory paradox: when attempting to display these qualifications in professional correspondence, on nameplates, or in public health communications, they may receive objections or notices from State Medical Council anti-quackery cells on grounds that the qualifications are not 'registrable' under NMC Schedule I, II, or III. This creates an absurd situation where: (i) the government mandates complex administrative functions requiring competencies not provided through standard medical education; (ii) premier national institutions offer training programs directly addressing these competency gaps; (iii) motivated doctors pursue these programs at personal expense and time; and yet (iv) acknowledging this training may attract regulatory action.⁷

This is not merely an administrative inconvenience; it actively discourages professional development among the doctors who most need it, perpetuates the competency gaps directly contributing to preventable mortality, and constitutes a violation of the principle of equity between similarly qualified professionals performing equally important national healthcare functions. The constitutional dimensions of this inequity are examined in detail below.

3. CONSTITUTIONAL FRAMEWORK: RIGHT TO HEALTH AND PROFESSIONAL DEVELOPMENT

3.1 Article 21: Right to Life and the Right to Health

Article 21 of the Constitution of India provides the foundational guarantee that 'No person shall be deprived of his life or personal liberty except according to procedure established by law.' Through decades of progressive interpretation, the Supreme Court of India has expansively construed the right to life to encompass the right to health, the right to access quality healthcare, and the right to emergency medical treatment as integral components of living with human dignity.⁸

The landmark judgment in *Paschim Banga Khet Mazdoor Samity v. State of West Bengal* (1996)—where the Supreme Court held that failure to provide emergency medical treatment violates Article 21—established that the right to health creates both negative obligations (state cannot deprive citizens of healthcare access) and positive obligations (state must affirmatively ensure healthcare availability, accessibility, and quality).⁹ The Court stated explicitly that 'It is the obligation of the State to ensure that every person has access to the best treatment possible.'

This positive obligation has been consistently reinforced across subsequent jurisprudence. In *Consumer Education and Research Centre v. Union of India* (1995),¹⁰ the Supreme Court held that the right to health is an integral facet of meaningful right to life. In *State of Punjab v. Mohinder Singh Chawla* (1997),¹¹ the Court affirmed that the state has an obligation to provide medical care and protect the health of citizens as part of its duty under Articles 21 and 47. The chain of constitutional jurisprudence firmly establishes that systematic failures in primary healthcare delivery of the magnitude documented in Kamrup District; constitute actionable violations of the constitutional right to health.

3.2 Article 47: Directive Principle for Public Health

Article 47 of the Constitution of India, under Directive Principles of State Policy, explicitly mandates: 'The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties.' While Directive Principles are not directly enforceable, the Supreme Court has consistently held they must be read in conjunction with Fundamental Rights, and that the state's compliance with Directive Principles is a legitimate basis for judicial review of policy adequacy.¹²

The Supreme Court in *Bandhua Mukti Morcha v. Union of India* (1984) held that when Directive Principles and Fundamental Rights can be read to give effect to each other, the court must do so.¹³ When Article 47's mandate for public health improvement and Article 21's right to life are read together, they create an unambiguous constitutional imperative for health system investments specifically targeting preventable mortality; the type of investment proposed in this policy paper.

3.3 Right to Professional Development: Equality Dimensions

The systematic difference in treatment between Health Cadre A and Health Cadre B doctors regarding research degree recognition raises equality dimensions under Article 14 (Right to Equality) and Article 16 (Equality of Opportunity in Public Employment). When Health Cadre B doctors can display research degrees and additional qualifications without regulatory challenge while Health Cadre A doctors face anti-quackery actions for identical qualifications from identical UGC-recognized institutions, this differential treatment requires a reasonable, non-arbitrary justification to pass constitutional scrutiny.

No such justification exists. Both cadres hold MBBS degrees from Medical Council of India/NMC recognized institutions. Both are registered with the Assam Medical Council. Both perform functions essential to public health. The sole distinction is the healthcare tier where they work - a distinction that provides no rational basis for differential treatment of legitimately earned academic credentials. The Supreme Court has consistently held that differential treatment without rational nexus violates Article 14's guarantee of equality.¹⁴ This analysis suggests that systematic regulatory barriers to Health Cadre A doctors displaying research degrees warrant legal challenge, and that the Government of Assam's explicit policy of recognizing such degrees should be enforced through appropriate administrative mechanisms.

4. NMC REGULATORY FRAMEWORK AND COMPLIANCE PATHWAYS

4.1 NMC Schedules and Additional Qualifications

The National Medical Commission Act 2019, replacing the Indian Medical Council Act 1956, governs medical education and practice in India. The NMC Schedules I, II, and III list recognized medical qualifications for primary registration and additional qualifications.¹⁵ Section 34 of the NMC Act provides for recognition of additional qualifications. The critical regulatory distinction - insufficiently appreciated in implementation is between qualifications that are 'registrable' (can be added to the NMC register as post-nominal designations) and qualifications that are 'legitimate' (earned from UGC-recognized institutions through proper academic processes).

A PhD from a UGC-recognized university is a nationally recognized academic degree under the University Grants Commission Act 1956; its legitimacy as an academic qualification is unquestionable. The NMC's non-inclusion of PhD/DSc in registrable schedules reflects the distinction between academic research degrees and clinical specialty qualifications—not a prohibition on earning or displaying research degrees. Section 52(2) of

the NMC Act, which addresses unauthorized practice, has no application to a registered medical practitioner displaying a legitimately earned research degree from an accredited university; there is no unauthorized practice in acknowledging an academic qualification.¹⁶

The appropriate regulatory framework distinguishes between: (i) claiming clinical specialist status through non-registrable qualifications (prohibited - a medical officer cannot claim to be a 'Specialist' in Cardiology based on a certificate course); and (ii) acknowledging academic research degrees and skill development training (legitimate - displaying PhD or DSc after completing rigorous research from UGC university is academic disclosure, not clinical claim). This distinction must be operationalized through clear guidelines from the Assam Medical Council and Health & Family Welfare Department.

4.2 Skill Development Courses: The Regulatory Gray Zone

Health Cadre A doctors pursuing skill development programs from premier institutions like NIHF New Delhi, CMC Vellore, IGNOU School of Health Sciences, AIIMS, PGIMER acquire competencies in public health management, NCD management, behavioral health, community medicine, and health program administration. These competencies are directly required for effective primary healthcare delivery and health system administration.

The regulatory challenge arises not from the qualifications themselves but from their display: when a medical officer completes an NIHF certificate in Health Systems Management and mentions it in correspondence, or when an IGNOU diploma in Cardio-Physician (Non-Invasive) is displayed by a doctor running a preventive cardiology clinic at a PHC, this may attract anti-quackery cell attention. The solution lies not in prohibiting pursuit of these programs which would be both counterproductive and constitutionally suspect but in establishing gubernatorially notified guidelines explicitly stating that: (i) these programs are legitimate skill development activities; (ii) certificates may be displayed with appropriate designation indicating non-specialist nature; and (iii) medical officers completing such programs are encouraged to apply these skills in PHC-level practice.¹⁷

5. COMPARATIVE ANALYSIS: THE KERALA PRIMARY HEALTHCARE MODEL

5.1 Kerala's Transformation: What Made It Possible

Kerala's achievement of health indicators comparable to high-income countries (life expectancy 75.1 years vs. national 70.9; IMR 6 vs. national 27; MMR 42 vs. national 167) despite moderate per capita income represents the most studied example of primary healthcare-driven health system transformation in India.¹⁸ The Kerala model's essential components; systematically analyzed through multiple research collaborations provide actionable lessons for Assam.

Primary healthcare investment: Kerala's historically higher public health expenditure per capita (2.5–3× national average as a proportion of state GDP) has funded adequate PHC and CHC staffing, infrastructure maintenance, essential medicines supply, and health worker capacity building. Crucially, Kerala has maintained functional, well-staffed Sub-Centers and PHCs serving genuine primary care functions rather than merely administrative shells.¹⁹

Workforce development: Kerala has systematically invested in health worker education at all levels from ASHA and ANM training through PHC medical officer continuing education to specialist workforce development. The Kerala University of Health Sciences provides accessible postgraduate education pathways; the Kerala Medical Services Corporation ensures essential medicine supply reliability; and district health systems support regular training and performance review.²⁰

Social determinants: Kerala's historically high female literacy (94% vs. national 70%), low child marriage rates, and high social capital create a population that actively engages with and benefits from healthcare services. However, comparative studies consistently demonstrate that even controlling for social determinants, Kerala's health system performance exceeds what socioeconomic factors alone would predict; confirming genuine healthcare system quality contributions.²¹

5.2 Lessons for Assam: Transferable Strategies

The Kerala model suggests five priority strategies transferable to Assam's context: (i) Systematic investment in PHC quality over quantity ensuring 18 existing PHCs function at full capacity before adding new facilities; (ii) Medical officer skill development as a systematic program rather than individual initiative - institutionalized continuing education with protected time, facilitator support, and organizational recognition; (iii) Essential

medicines supply chain strengthening - ensuring antihypertensives, antidiabetics, antibiotics, and emergency medications are consistently available at PHC level; (iv) Performance-linked accountability - connecting medical officer and PHC performance metrics to career advancement, with specific indicators for NCD screening coverage, follow-up rates, and vaccination coverage; and (v) Community health worker empowerment - equipping ASHAs with evidence-based protocols, performance support tools, and supervisory mechanisms.

6. PROPOSED REFORMS: THE SEWA SETU SOLUTION AND BEYOND

6.1 Sewa Setu Portal-Based Database for Qualification Recognition

The proposed 'Sewa Setu' portal-based integrated database system provides a transparent, accountable, NMC-compliant mechanism for recognizing Health Cadre A doctors' additional qualifications and skill development achievements. The system envisions a secure, government-administered digital portal where medical officers can register: UGC-recognized research degrees (PhD, DSc) with university verification; NHM-recognized skill development certifications with institutional verification; continuing medical education credits from accredited programs; and research publications and public health contributions.

The portal would serve multiple functions: (i) enabling qualified display of legitimate credentials in a standardized, verifiable format that eliminates regulatory ambiguity; (ii) creating institutional awareness of medical officer competency profiles to inform posting, training, and program assignment decisions; (iii) generating aggregate data on skill development gaps across the health system to guide systematic training investment; and (iv) providing anti-quackery cells with a verification mechanism to distinguish legitimate credentials from fraudulent claims thereby actually strengthening, rather than undermining, anti-quackery efforts.

6.2 Gubernatorially Notified Skill Development Course Framework

The Government of Assam, through Health & Family Welfare Department Government Orders, should establish a formally recognized list of skill development courses in priority domains for Health Cadre A doctors. Each course on this list would be explicitly designated as 'Non-Specialist Skill Development Certification' - enabling display with this specific designation to prevent any misrepresentation of specialist status while legitimately acknowledging the acquired competency.

Priority domains for immediate inclusion: (i) Public Health Management and Health Administration (NIHFW programs); (ii) NCD Management and Preventive Cardiology (IGNOU PG Diploma in Cardio-Physician; NIHFW NCD module); (iii) Mental Health and Addiction Brief Interventions (NIMHANS capacity building programs); (iv) Basic Reproductive Medicine and Infertility Assessment (Srimanta Sankaradeva University postgraduate diploma in Obs/Gyn); (v) Medical Certification of Cause of Death and Vital Statistics (WHO MCCD training); and (vi) Health Communication and Behavioral Change (NIHFW/CMC programs).

6.3 The IGNOU Cardio-Physician Model: Retrospective NMC Recognition Precedent

The IGNOU Post Graduate Diploma in Cardio Physician (Non-Invasive)—offered through a collaboration between IGNOU and the Indian Society of Cardiology—represents an existing model for preventive cardiology skill development that received retrospective NMC recognition after program establishment.²² This precedent demonstrates that NMC recognition of non-specialist skill development programs is achievable through appropriate academic process. The program enables medical officers to conduct non-invasive cardiac evaluation (ECG interpretation, echocardiography basics, risk factor management, lipid management) without claiming specialist status precisely the distinction the proposed framework would establish across multiple domains.

Advocating for retrospective or prospective NMC recognition of additional programs in priority domains, through the Government of India's Health Ministry in collaboration with Assam Health Department, would place these skill certifications on the firmest possible regulatory footing while expanding PHC-level capacity across essential healthcare domains.

7. THE SNAKEBITE SUCCESS MODEL: PROOF OF CONCEPT FOR SKILL-DRIVEN TRANSFORMATION

Assam's snakebite management transformation is one of modern Indian public health's most remarkable success stories, providing compelling evidence that systematic physician training and protocol standardization can achieve transformative outcomes even in resource-constrained settings.²³ The strategy: training over 2,500 Assam doctors in snakebite assessment (species identification, envenomation syndrome recognition, anti-snake venom dose calculation and administration, complication management); standardized snakebite management

protocols at all facility levels; community ASHA-led first aid and transport protocols; and district-level monitoring. The outcome: >90% reduction in snakebite mortality over five years, from a leading cause of preventable death to a manageable clinical emergency.

This model's applicability extends directly to the domains where quackery and preventable mortality documentation reveals greatest need: NCD management and stroke prevention (train all PHC medical officers in hypertension and diabetes screening, risk stratification, treatment protocols, and follow-up systems); sepsis recognition and management (train district hospital and CHC physicians in Sepsis-3 identification and Hour-1 Bundle); MCCD and death certification (deploy standardized WHO training for all certifying physicians); addiction brief intervention (train PHC medical officers in AUDIT screening and SBIRT). Each of these training programs is substantially less complex than snakebite management training, operates in a domain with stronger existing evidence base, and addresses healthcare failures with larger mortality burdens. If Assam can train 2,500 physicians in snakebite management to achieve >90% mortality reduction, replicating this model in NCD prevention, sepsis management, and behavioral health would prevent hundreds of deaths annually.

8. IMPLEMENTATION ROADMAP

Timeline	Intervention	Lead Agency	Expected Outcome
0-3 months	Government Order establishing Sewa Setu portal framework; gazette notification of skill development course list	Health & FW Dept, Assam	Legal clarity on qualification display
3-6 months	MCCD training for all certifying medical officers; NCD screening protocol rollout at 18 PHCs	CMHO Kamrup, NHM	Reduced uncertified deaths; improved screening
6-12 months	Pilot specialized PHC clinics (NCD, addiction brief intervention); AUDIT screening integration	NHM, Srimanta Sankaradeva Univ.	Reduced alcohol-related deaths; improved NCD detection
12-24 months	Sepsis protocol training at district/CHC level; cardiac care unit establishment	Medical Education Dept, NHM	25-30% reduction in sepsis mortality
24-36 months	Statewide NCD screening program; full Sewa Setu portal launch; skill development course expansion	State Health Dept, NHM Assam	35-40% reduction in young-adult stroke deaths
36-60 months	Full primary healthcare strengthening strategy; research capacity at district level; Kerala-comparable PHC quality standards	State Health Dept, NITI Aayog	300+ preventable deaths averted/5yrs in Kamrup alone

Table 1: Implementation roadmap for primary healthcare strengthening and Health Cadre A equity reforms in Assam.

9. CONCLUSION

The evidence is unambiguous: 696 preventable deaths in Kamrup District over five years represent a systematic failure of primary healthcare delivery, and this failure is substantially attributable to inadequate training, skill development, and professional support for Health Cadre A doctors—the physicians who actually deliver primary care to the majority of Assam's population. The economic burden of ₹2,230 crores over five years at state level provides the financial argument; the 551 young adults dead from strokes that systematic blood pressure screening would have prevented provides the moral argument; and the Constitution's Articles 21 and 47 provide the legal argument for immediate, comprehensive primary healthcare reform.

The bifurcation of Assam's healthcare system into a well-supported Health Cadre B and a systematically under-supported Health Cadre A with regulatory barriers actively discouraging professional development in the cadre most responsible for preventive care is both counterproductive and constitutionally questionable. The Supreme Court's consistent interpretation of Article 21 as requiring state action to ensure healthcare quality and the Article 47 mandate for public health improvement collectively create affirmative obligations that the current situation fails to satisfy.

The path forward is clear: implement the Sewa Setu portal for transparent qualification recognition; establish gubernatorially notified NMC-compliant skill development course framework; deploy systematic training programs in NCD management, MCCD, sepsis recognition, and behavioral health; expand skill development courses following the IGNOU Cardio-Physician precedent; and invest in PHC infrastructure and essential medicines supply reliability following the Kerala model. Assam's snakebite success story proves this is achievable. The will, the infrastructure, and the evidence all exist. What remains is the institutional commitment to deploy them systematically in service of the hundreds of lives that preventable primary care failures are costing every year.

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