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Out-of-Pocket Expenditure and Catastrophic Health-Spending Dynamics: Measurement, Determinants and Pathways to Financial Protection

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Abstract: Out-of-pocket expenditure (OOPE) remains a major barrier to universal health coverage because it requires households to finance healthcare directly at the point of use. Such payments become catastrophic when they substantially reduce a household's ability to meet essential needs and may become impoverishing when they push families below, or further below, a poverty threshold. Recent global estimates indicate that 2.1 billion people experienced financial hardship from out-of-pocket health spending in 2022, including approximately 1.6 billion people who were living in poverty or were pushed deeper into poverty by health payments.[1] The burden is not determined by medical costs alone; it reflects the interaction of illness severity, household resources, service availability, insurance design and indirect costs such as transport, caregiving and lost income. India has made measurable progress: National Health Accounts estimates show that OOPE declined from 64.2% of total health expenditure in 2013–2014 to 43.4% in 2022–2023, alongside increased government health spending.[2] Nevertheless, medicines, diagnostics, outpatient care, private hospitalization and chronic disease continue to generate substantial financial exposure. Insurance schemes can reduce selected hospitalization expenses, but protection remains incomplete when outpatient treatment, medicines, non-medical costs and services outside benefit packages are excluded. Measurement is complicated by different catastrophic-spending thresholds, recall periods and the omission of households that forgo care because they cannot pay. Financial protection requires stronger tax-funded healthcare, free essential medicines and diagnostics, comprehensive primary care, strategic purchasing, effective regulation of private providers and integration of direct and indirect cost protection. Future research should use longitudinal household data and evaluate not only whether care was used, but whether it was affordable without debt, asset sales or sacrifice of essential consumption.

Keywords: out-of-pocket expenditure; catastrophic health expenditure; financial protection; universal health coverage; health insurance; India.

INTRODUCTION

Universal health coverage requires that all people receive needed health services without financial hardship. Service availability alone is therefore insufficient. A health system cannot be considered universal when treatment is technically available but accessing it requires a family to borrow money, sell productive assets, reduce food consumption or withdraw children from school.

Out-of-pocket expenditure refers to direct payments made by individuals or households to healthcare providers, pharmacies, diagnostic facilities and other suppliers at the time a service is used. It generally includes consultation fees, medicines, investigations, hospitalization charges and medical supplies. Depending on the survey and analytical framework, transport, accommodation and other non-medical expenses may be reported separately.

OOPE is not synonymous with catastrophic health expenditure (CHE). A high-income household may pay a large medical bill without sacrificing essential consumption, whereas a much smaller payment may be catastrophic for a poor household. Catastrophe is therefore relational: it depends on both the amount paid and the household's available resources.

The consequences extend beyond immediate expenditure. Households may delay treatment, use incomplete courses of medicines, shift to lower-quality providers or avoid care altogether. Those who obtain treatment may finance it through savings, loans, asset sales or assistance from relatives. These coping strategies can produce long-term indebtedness and loss of livelihood. Financial protection should consequently be assessed as a dynamic process rather than a single expenditure ratio.

Defining and Measuring Catastrophic Health Spending

Two principal approaches are commonly used to measure CHE. The **budget-share method**, used for Sustainable Development Goal indicator 3.8.2, identifies households whose OOPE exceeds a specified proportion—commonly 10% or 25%—of total household consumption or income. The **capacity-to-pay method** compares OOPE with resources remaining after a deduction for basic subsistence needs, often using a threshold of 40%.

Neither approach is universally superior. The budget-share method is transparent and easy to communicate, but a fixed percentage of total consumption may understate hardship among poor households because most of their resources are already committed to food and housing. Capacity-to-pay methods better acknowledge basic needs but are sensitive to assumptions about subsistence expenditure.

Measurement should include both **incidence** and **intensity**. Incidence identifies the proportion of households crossing the threshold. Intensity measures how far affected households exceed it. Two populations may have the same CHE incidence but substantially different overshoot.

Impoverishing health expenditure is assessed by comparing household living standards before and after OOPE. A household may be pushed below the poverty line, while one already below it may experience a deepening of poverty. Recent global monitoring increasingly captures this latter group, correcting the misleading implication that households already classified as poor cannot experience further financial deterioration.[1]

These indicators still underestimate hardship. Households that cannot afford care may report little or no OOPE and therefore appear financially protected. This **zero-expenditure paradox** means low spending can reflect either effective prepaid coverage or unmet healthcare need. Expenditure measures should always be interpreted alongside service use, forgone care and health outcomes.

Global Dynamics

The 2025 WHO–World Bank global monitoring report estimated that the proportion of the global population experiencing financial hardship from OOPE declined from approximately 34% in 2000 to 26% in 2022. However, because of population growth, the absolute burden remained enormous: around 2.1 billion people experienced hardship in 2022.[1] Progress has also been uneven across and within countries.

Financial hardship is concentrated where health financing relies heavily on direct household payments and public expenditure is inadequate or fragmented. Low-income households, older people, individuals with chronic disease, persons with disabilities and families requiring repeated specialist care face particularly high risk.

The epidemiological transition is changing the pattern of expenditure. Acute hospitalization remains financially dangerous, but chronic diseases create repeated outpatient costs for consultations, medicines, monitoring and transport. These smaller payments may never appear as a single catastrophic event, yet cumulatively erode household consumption and savings.

COVID-19 further demonstrated that financial protection can deteriorate through several simultaneous pathways: treatment costs, interruption of routine services, income loss and increased prices. It also showed that emergency expansion of public financing can temporarily reduce direct payment burdens, although these gains may not persist without institutional reform.

India's Changing Health-Financing Profile

India has experienced a substantial decline in OOPE as a share of total health expenditure. According to the National Health Accounts 2022–2023, OOPE fell from 64.2% in 2013–2014 to 43.4% in 2022–2023. Over the same period, government health expenditure increased from 28.6% to 43.7% of total health

expenditure.[2] These changes represent meaningful progress, but OOPE remains a major source of healthcare financing.

The share of OOPE in total health expenditure should not be interpreted as the proportion of households experiencing catastrophe. It is a macroeconomic financing indicator. CHE is a household-level distributional measure. OOPE can decline as a national share while remaining highly concentrated among households facing cancer, critical illness, multimorbidity or private hospitalization.

India's financing landscape is also highly heterogeneous. States differ in public health expenditure, service availability, medicine supply, insurance implementation and private-sector dependence. Rural residents may face lower medical fees in some settings but higher transport and accommodation costs. Urban households have greater provider choice but are more exposed to expensive private care and diagnostic intensity.

What Drives Out-of-Pocket Expenditure?

Medicines and outpatient care

Medicines have historically constituted one of the largest components of household health spending in India. Analysis of national survey data found that medicines accounted for more than three-quarters of medical impoverishment and that medicine expenditure alone produced catastrophic spending in a substantial proportion of households.[3]

This pattern reflects limited availability of free medicines in some public facilities, chronic-disease treatment, private pharmacy purchasing and prescribing practices. Hospital insurance does not adequately protect households when the principal expenditure occurs every month at outpatient level.

Diagnostics create a similar burden. Even when consultation is free, patients may be referred to private laboratories because tests are unavailable or delayed in the public sector. Fragmentation between consultation, diagnosis and treatment converts nominally free care into a chain of household payments.

Hospitalization and private-sector use

Hospitalization generates large, concentrated bills. Private care commonly involves higher expenditure than public hospitalization, but patients may choose it because of perceived quality, shorter waiting times, specialist availability or weak public services.

Insurance can reduce the price of a covered hospitalization while leaving substantial balance billing, medicines, diagnostics and post-discharge costs. Package exclusions, lack of awareness, refusal of cashless treatment and care outside empanelled facilities further reduce protection.

Chronic disease and multimorbidity

Diabetes, hypertension, cardiovascular disease, cancer, kidney disease and chronic respiratory conditions require continuing expenditure. Multimorbidity increases both the number of encounters and the complexity of treatment. Older adults are particularly vulnerable because they may have reduced income, multiple medicines and greater hospitalization risk.

An analysis of nationally representative data on older adults found that healthcare spending consumed a considerable share of household resources and that catastrophic expenditure and impoverishment were strongly patterned by socioeconomic and health characteristics.[4]

Cancer and other high-cost conditions

Cancer illustrates the limits of conventional financial-protection systems. Costs include diagnosis, surgery, radiotherapy, medicines, repeated travel, accommodation, supportive care and lost earnings. Indian evidence has documented high levels of financial toxicity and catastrophic spending among cancer patients, including those receiving treatment in publicly financed settings.[5]

Rare diseases, organ transplantation, neonatal intensive care, dialysis and major trauma create similar risks. Financial protection must therefore include referral pathways and high-cost care rather than focus solely on common primary-care conditions.

Indirect and non-medical costs

Transport, food, accommodation, caregiving and income loss are often excluded from insurance packages. They can nevertheless determine whether a patient completes treatment. Rural households referred to tertiary facilities may spend more on travel and accommodation than on formal consultation fees.

Indirect costs are particularly important for tuberculosis, cancer, maternal care and long-duration treatment. Health financing that pays providers but ignores the household cost of reaching and remaining in care offers incomplete protection.

Table 1. Major dimensions of OOPE and catastrophic health-spending dynamics

Dimension	Mechanism of financial hardship	Population most affected	Limitation of conventional protection	Priority policy response
Outpatient medicines	Repeated purchase of prescribed drugs and stock-outs in public facilities	People with chronic disease, older adults and low-income households	Hospital insurance excludes routine medicines	Free essential medicines, generic procurement and prescription audit
Diagnostics	Payment for tests unavailable or delayed in public facilities	Patients requiring repeated monitoring or specialist evaluation	Consultation may be free while investigations remain chargeable	Strengthen public laboratories and provide cashless diagnostic packages
Hospitalization	Large one-time bills, deposits and balance billing	Uninsured households and users of private facilities	Coverage ceilings, exclusions and non-empanelled care	Strategic purchasing, standardized packages and prohibition of unauthorized charges
Chronic disease	Continuous consultations, medicines and monitoring	Households with diabetes, hypertension, kidney disease or multimorbidity	Annual hospitalization benefits do not cover cumulative outpatient costs	Comprehensive primary care and outpatient financial protection
Cancer and complex illness	Multimodal treatment, travel, supportive care and income loss	Poor and near-poor households requiring tertiary care	Fragmented schemes and incomplete benefit packages	End-to-end care pathways with transport and social support
Maternal and child health	Medicines, tests, transport and informal or ancillary payments	Rural families and women requiring referral care	"Free" care may exclude supply gaps and non-medical expenses	Zero-cost entitlements, referral transport and accountability
Geographic access	Travel, accommodation and lost wages for referral care	Rural, tribal, mountainous and remote populations	Insurance finances treatment but not access	Decentralized services, telehealth support and transport reimbursement
Informal employment	Income interruption during illness and caregiving	Daily-wage, migrant and gig workers	Medical coverage does not replace lost earnings	Paid sickness protection and social assistance
Health-related impoverishment	Borrowing, asset sales and reduced food or education spending	Poor and near-poor households	Claims data do not capture coping strategies	Longitudinal monitoring of debt, assets and consumption
Forgone care	Households avoid services because they cannot pay	Poorest and socially excluded populations	Low OOPE may be falsely interpreted as protection	Measure unmet need together with expenditure

Health Insurance: Progress and Persistent Gaps

Publicly financed health insurance has become a central component of India's financial-protection strategy. Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana finances specified secondary and tertiary hospital services for eligible families through empanelled public and private providers.

Evidence on financial protection is mixed. A national quasi-experimental assessment found that PM-JAY was associated with a greater probability of using private facilities but did not demonstrate a clear increase in hospitalization.[6] Facility-based studies have reported lower OOPE and CHE among beneficiaries for selected covered episodes, showing that cashless purchasing can provide meaningful protection when implemented effectively.[7]

Other studies have found that high expenditure persists among insured patients, particularly in private hospitals.[8] Differences across findings reflect scheme maturity, state implementation, patient selection, benefit packages and study design.

Insurance alone cannot correct inadequate primary care, medicine stock-outs, unnecessary hospitalization or unregulated provider prices. It may also redirect public resources towards hospital treatment while leaving prevention and outpatient management underfunded.

The relevant question is not simply whether a household holds an insurance card, but whether needed care is cashless, comprehensive, timely and of acceptable quality. **Nominal coverage** should be distinguished from **effective financial coverage**.

Public Health Significance

Catastrophic spending is both a consequence and a cause of poor health. Families may discontinue treatment because funds are exhausted, resulting in complications that generate further expenditure. Debt and asset loss can reduce nutrition, housing quality, education and capacity to cope with future illness.

Financial hardship also undermines trust. When public programmes promise cashless care but patients continue to pay for medicines or procedures, confidence in the health system declines. Transparent entitlements and accessible grievance mechanisms are therefore part of financial protection.

CHE is highly relevant to health equity. The same medical payment produces greater welfare loss in a poor household. Universal policies should consequently be combined with additional protection for socially disadvantaged, chronically ill and geographically remote populations.

Recent Advances

Expanded concepts of financial hardship

Recent global monitoring has moved beyond counting only households newly pushed below a poverty line. It now emphasizes those already poor who are pushed further into poverty, providing a more realistic picture of hardship.[1]

Linking claims, surveys and health records

Insurance claims provide detailed information on covered hospital services but miss uncovered payments and forgone care. Household surveys capture direct spending but often lack clinical detail. Linking these sources—under strong privacy governance—can provide a more complete account of treatment pathways and costs.

Digital public financial management

Digital eligibility systems, electronic claims, hospital dashboards and direct-benefit transfers can improve accountability and speed. However, authentication failures, digital exclusion and weak grievance systems can prevent vulnerable patients from receiving entitlements.

Financial toxicity as a patient-reported outcome

Cancer and other high-cost specialties increasingly measure financial toxicity alongside clinical outcomes. This captures anxiety, debt and treatment-related financial distress that conventional CHE thresholds may miss.

Greater attention to outpatient coverage

Policy debate is shifting from hospital-centred insurance towards comprehensive financial protection covering medicines, diagnostics and chronic-disease management. This is particularly important in India, where much OOPE occurs outside hospitalization.

Challenges and Limitations

CHE estimates are highly sensitive to threshold, denominator and recall period. A household may be classified as catastrophic under the 10% budget-share method but not under the 40% capacity-to-pay approach. Studies should report multiple thresholds and justify their preferred measure.

Household surveys are affected by recall error, especially for frequent outpatient purchases and major hospitalization costs. Consumption expenditure is itself difficult to estimate. Surveys may exclude institutionalized populations, migrants or households dissolved after severe illness or death.

Cross-sectional data cannot show whether households recover financially or remain indebted for years. They also cannot adequately capture repeated episodes.

Another limitation is the focus on payments rather than value. Low OOPE may coexist with poor-quality care, while expenditure may occasionally reflect preference for premium non-essential services. Financial-protection analysis should distinguish necessary care from avoidable or low-value utilization.

Finally, government and insurance expenditure can reduce household payments without controlling total costs. Provider-induced demand, unnecessary diagnostics and inflated packages may shift expenditure from households to public budgets. Strategic purchasing and quality regulation are therefore essential.

Future Directions and Policy Priorities

India's decline in OOPE should be consolidated through sustained increases in pooled public financing. Funding should prioritize comprehensive primary healthcare, district hospitals and dependable referral systems rather than rely predominantly on episodic hospitalization coverage.

Free essential medicines and diagnostics are among the most direct routes to reducing OOPE. Procurement systems must ensure quality, stock continuity and rational prescribing. Publicly displayed medicine availability and electronic stock monitoring can improve accountability.

PM-JAY and state schemes should strengthen cashless implementation, prohibit balance billing and simplify grievance redressal. Benefit packages should be connected with pre-hospital diagnosis and post-discharge treatment rather than ending when the patient leaves the hospital.

Private-sector regulation is indispensable. Standard treatment guidelines, package rates, transparent billing, clinical audit and penalties for unauthorized charges are necessary where public funds purchase private services.

Financial protection should include transport and income-support mechanisms for conditions requiring repeated attendance. Health and social-protection databases can support this goal but must not create exclusion through complex documentation.

Research priorities include longitudinal household panels, state-level comparative analyses, disease-specific cost studies and evaluation of the 2025 health-consumption survey. Studies should measure debt, asset sales, income loss, forgone care and recovery after illness, not merely the initial bill.

CONCLUSION

Out-of-pocket expenditure remains one of the clearest indicators of the distance between healthcare availability and genuine universal coverage. Catastrophic spending occurs when healthcare payments compete with food, housing, education and other essential needs; impoverishment occurs when these payments reduce already limited living standards.

Globally, financial hardship remains widespread despite improvements in service coverage. India has achieved an important reduction in OOPE as a share of total health expenditure, accompanied by increased government financing. This progress should be acknowledged, but it does not mean that household financial risk has been eliminated.

Medicines, diagnostics, outpatient chronic care, private hospitalization, indirect costs and high-cost diseases continue to expose families to severe financial consequences. Publicly financed insurance can reduce selected hospital expenses, but insurance cards alone do not guarantee cashless or comprehensive care.

The next phase of financial-protection policy must integrate tax-funded public services, outpatient benefits, free medicines and diagnostics, strategic purchasing and social protection. Success should be measured not only by enrolment, claims or declining OOPE shares, but by whether households can obtain effective care without debt, asset loss, reduced essential consumption or avoidance of treatment.

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