

Between social protection and complementary insurance: an analysis of health risk coverage in Algeria

Fatima Zahra Boukhedimi ^{1*}, Mohamed Abdelwahab Merad ², Farida Doucanef Gadiri ³

¹ Lecturer, Hassiba Ben Bouaali University of Chlef, Laboratory: Financial and Banking Systems and Macroeconomic Policies in the Face of International Fluctuations, Algeria, Email: f.boukhedimi@univ-chlef.dz

² Executive in the financial sector, Algeria, Email: meradmohamed20@gmail.com

³ Executive at the National Social Insurance Fund (CNAS), Algeria, E-mail: faridazkg@gmail.com

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Abstract:

The aim of this study is to demonstrate the structures of health risk management: composed of the social security system (CNAS / CASNOS) and those from the private insurance sector. Social security is financed by mandatory monthly contributions from employees or periodic/annual contributions for the self-employed, plus support from public funds. It covers approximately 80% of the health needs of social security beneficiaries, offering necessary benefits in kind (consultations, hospitalizations and medications) and in cash (compensations). Since 1962, several reforms have standardized and expanded this coverage, but challenges remain: the saturation of public hospitals, regional disappearance, unequal services, inefficient management of funds and health structures. Private supplementary health insurance is expected to decline by 17% (0.4% of the market, 87.6 million DA in 2024 compared to 106.1 million DA as of December 31, 2023). This is due to the predominance of the public system. Despite overall growth in personal insurance (+3.2%, 20.1 billion DA), supplementary health insurance remains limited.

Recommendations include strengthening public infrastructure, extending free care for serious illnesses, and developing private health insurance products targeting care not covered.

Key Words: Health risks, Social security, Insurance, Financing, Algeria.

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I. Introduction

Health risk coverage constitutes a fundamental pillar of contemporary health systems, as it directly addresses the core challenges of social protection, financial sustainability, and

* Corresponding author

equitable access to healthcare services. International literature consistently highlights that effective health risk pooling mechanisms are essential to protect households from catastrophic health expenditures, reduce inequalities in access to care, and enhance overall system efficiency (World Health Organization, 2010; Arrow, 1963; Kutzin, 2013). In this context, the governance of health risk is not merely a technical or financial issue, but a strategic dimension of public policy that reflects societal choices regarding solidarity, redistribution, and social justice.

In Algeria, health risk management occupies a central position within the governance of the health system and is characterized by a complex and multi-actor institutional architecture. This governance framework involves several key public authorities—most notably the Ministries of Health, Labour, Employment, and Social Security—whose mandates intersect across health service delivery, employment regulation, and social protection. In addition, a broad range of stakeholders participate in the management and implementation of health risk coverage, including public and private healthcare institutions, professional associations (physicians, pharmacists, and other health professionals), representatives of salaried and self-employed workers, civil society organizations, and territorial authorities at local and regional levels. Such plurality of actors reflects both the breadth of health risk governance and the challenges of coordination inherent in multi-sectoral systems (Saltman, Busse & Figueras, 2007).

The Algerian health risk coverage system is structured around two main and complementary mechanisms. The first is the public social security system, which constitutes the cornerstone of health financing and is based on compulsory affiliation and mandatory contributions. This system operates according to principles of solidarity and redistribution, whereby contributions are generally proportional to income rather than individual health risk, allowing for collective risk pooling across generations and socio-economic groups. As emphasized in the health economics literature, such contributory social insurance models play a critical role in ensuring universal coverage and financial protection against illness-related shocks (Carrin & James, 2005; Wagstaff, 2010).

The second mechanism consists of private complementary health insurance schemes, which function on a voluntary basis and aim to supplement the coverage provided by the public system. These schemes offer differentiated benefit packages depending on the level of contribution chosen by the insured, thereby responding to heterogeneous needs, expectations, and willingness to pay. While private health insurance does not replace the public system, it can contribute to improved access to certain services, reduced out-of-pocket payments, and enhanced perceived quality of care, provided that appropriate regulatory

frameworks are in place to limit inequities and risk segmentation (OECD, 2019; Thomson et al., 2013).

Since the late 1960s, particularly following the establishment of national insurance companies in 1967, the Algerian insurance sector has experienced gradual development marked by the diversification of personal insurance products and the professionalization of service delivery. These developments mirror broader transformations in health systems worldwide, where private insurers increasingly act as complementary actors within predominantly public or social insurance-based systems. In Algeria, private insurers have progressively expanded their role in health risk coverage by offering tailored products and services designed to enhance financial protection and healthcare access for specific population groups (Barrientos, 2012).

Against this background, the present research seeks to analyze the evolution of personal insurance in Algeria, with a particular focus on health insurance as a key instrument of health risk management. The study examines the institutional arrangements governing health risk coverage within both the social security system and the insurance sector, identifies the public institutions and private companies responsible for health coverage, and explores the structural, organizational, and regulatory challenges facing these mechanisms. In line with existing analytical frameworks on health system performance, the research also aims to formulate evidence-based recommendations to improve the effectiveness, coordination, and sustainability of health risk coverage in Algeria (WHO, 2007; Kutzin et al., 2016).

More specifically, the objectives of this study are threefold: first, to analyze the structural composition and functioning of the social security and insurance systems in Algeria; second, to identify the conditions governing affiliation, eligibility, and coverage within each system; and third, to highlight the respective roles and responsibilities of public institutions and private insurance companies in health risk coverage. Through this analysis, the study contributes to a deeper understanding of personal insurance as a strategic lever for strengthening healthcare financing, improving service delivery, and advancing social protection outcomes within the Algerian context.

2. Health risk: between social and insurance coverage

Health risk constitutes a central analytical concept in public health, social protection, and health economics. The World Health Organization (WHO), in its *Global Health Risks Report* (2009), defines health risk broadly as “a factor that increases the likelihood of adverse health outcomes.” This definition underscores the probabilistic nature of health events and

highlights the multifactorial determinants of disease and disability. Health risk thus refers not only to the occurrence of illness itself, but also to the exposure to behavioral, environmental, and physiological risk factors that increase the probability of morbidity, mortality, and long-term impairment.

2.1. Health risk and risk factors

From an epidemiological perspective, health risk is closely linked to exposure to identifiable risk factors. Behavioral risk factors—such as tobacco use, unhealthy diets, physical inactivity, and harmful alcohol consumption—are major contributors to the global burden of disease, particularly non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes, cancers, and chronic respiratory conditions (WHO, 2009). Environmental risks, including air pollution, unsafe water, and occupational hazards, further exacerbate health vulnerabilities, especially in urban and industrial settings. Physiological risk factors—such as hypertension, obesity, hyperglycemia, and hypercholesterolemia—often act as intermediaries between lifestyle behaviors and clinical disease outcomes.

Reducing exposure to these risk factors is therefore a cornerstone of public health policy and disease prevention strategies. WHO (2014, 2023) emphasizes that prevention and risk reduction not only improve population health outcomes but also reduce long-term healthcare costs and enhance health system sustainability. However, despite prevention efforts, health risks cannot be fully eliminated. Illness, accidents, maternity, disability, and chronic conditions remain unavoidable elements of human life, generating uncertainty and financial vulnerability for individuals and households.

2. 2. Health risk as a social and economic risk

Beyond its biomedical dimension, health risk possesses profound social, economic, and institutional implications. Health-related events—ranging from acute illness and chronic disease to maternity, accidents, and disability—can lead to substantial out-of-pocket medical expenditures, income loss, reduced labor productivity, and long-term impoverishment (CLEISS, 2024; Wagstaff et al., 2018; Fadlallah et al., 2022; Ekman, 2004). Beyond the direct financial burden, such events can generate cascading social consequences, including household coping strategies like reducing education or nutrition expenditures, selling productive assets, or withdrawing family members from the labor market (Xu et al., 2003; Wagstaff et al., 2018). The inherently uncertain nature of these events—regarding timing, severity, and associated costs—renders health risk particularly difficult for individuals to manage without external support. This uncertainty is compounded by information

asymmetries between healthcare providers and patients, the complexity of treatment pathways, and the often prohibitive costs of medical interventions (Arrow, 1963; Cutler & Zeckhauser, 2000; Dror et al., 2005). Empirical evidence shows that households in low- and middle-income countries often face financial catastrophe or impoverishment when relying solely on out-of-pocket payments, highlighting the critical role of collective risk-sharing mechanisms (Fadlallah et al., 2022; Ekman, 2004).

Arrow's pioneering analysis demonstrated that health care markets fundamentally diverge from standard competitive market assumptions. Specifically, the presence of uncertainty, asymmetric information, moral hazard, and adverse selection prevents efficient allocation of resources in purely private markets (Arrow, 1963; Pauly, 1968; Zweifel et al., 2009). Moral hazard arises when insured individuals modify their behavior after coverage, potentially increasing healthcare utilization, while adverse selection occurs when high-risk individuals disproportionately seek coverage, undermining the actuarial balance of private insurance pools. These market failures justify the treatment of health risk as a social risk, requiring collective intervention and state-regulated mechanisms to ensure equity, efficiency, and financial protection (Barr, 2012; OECD, 2020; Wagstaff et al., 2018). Recent cross-country analyses confirm that countries with well-structured social health insurance systems experience lower incidence of catastrophic health expenditures, higher financial protection, and improved equity in access to care (Fadlallah et al., 2022; Savedoff et al., 2012; Buntin et al., 2011).

3. Institutional response: the health insurance branch of social security

To mitigate health risks as social risks, modern welfare states have institutionalized social health insurance as a cornerstone of public protection. Within these frameworks, a dedicated branch—commonly referred to as the health insurance branch—focuses on covering medical expenses, providing income compensation during periods of incapacity, and protecting individuals against catastrophic health-related expenditures (ILO, 2024; OECD, 2019; Fadlallah et al., 2022). These systems operationalize the principles of risk pooling, solidarity, and redistribution, wherein contributions are generally income-based rather than risk-based, thereby spreading the financial burden across the healthy and the sick, the wealthy and the less affluent, and across working and dependent populations (Barr, 2012; De Ferranti et al., 2004; Wagstaff et al., 2018). Studies indicate that such arrangements reduce the likelihood of household impoverishment following health shocks, particularly in contexts with strong regulatory frameworks and comprehensive coverage packages (Xu et al., 2003; Wagstaff et al., 2018).

Mandatory social health insurance not only provides direct financial protection but also facilitates equitable access to essential health services. Empirical studies show that countries with robust social health insurance systems consistently achieve lower incidence of catastrophic health expenditures, reduced out-of-pocket payments, and more equitable health outcomes compared to systems relying predominantly on voluntary insurance or direct payments (WHO, 2010; Savedoff et al., 2012; Fadlallah et al., 2022; Ekman, 2004; Buntin et al., 2011). For instance, European countries with universal or near-universal coverage—such as France, Germany, and the Nordic states—demonstrate both improved population health outcomes and greater social cohesion, illustrating the dual protective and redistributive role of social health insurance (OECD, 2020; European Commission, 2022).

Moreover, social health insurance systems generate macro-level benefits by stabilizing national health expenditures, enhancing labor market resilience, and supporting economic productivity. By reducing financial uncertainty associated with illness, these systems allow households to maintain consumption and prevent impoverishment, while facilitating public health interventions through comprehensive population coverage (Folland et al., 2016; Cutler, 2004; Wagstaff et al., 2018). In addition, social health insurance creates a platform for secondary uses of health data, including epidemiological surveillance, health technology assessment, and policy evaluation; further enhancing societal health benefits (Safran et al., 2021; Shabo et al., 2022; De Lusignan et al., 2014).

While mandatory social health insurance constitutes the backbone of risk protection, complementary or voluntary health insurance schemes play an important role in enhancing financial protection and access to care. These schemes, typically offered by private insurers, allow for coverage of services excluded from the statutory benefits package, reimbursement of co-payments, or provision of additional amenities. Their integration with public health insurance is critical to maintaining equity while expanding choice, and it requires robust regulation to prevent the emergence of market segmentation or inequities (OECD, 2019; Pauly, 1968; Buntin et al., 2011; Fadlallah et al., 2022).

The coexistence of mandatory and complementary systems is particularly relevant in contexts with heterogeneous populations and variable healthcare needs. For instance, in Algeria—as in many middle-income countries—the public social security system provides universal or quasi-universal baseline coverage, whereas private complementary insurance expands access to additional services for those who can afford higher contributions, thus reinforcing but also challenging equity objectives (Dror et al., 2005; WHO, 2023; Ekman, 2004). Comparative analyses indicate that well-coordinated integration of public and private insurance can enhance overall system resilience, increase uptake of preventive services, and

reduce inequities in care utilization (Buntin et al., 2011; Ammenwerth et al., 2020; Fadlallah et al., 2022).

Effective management of health risks via social insurance requires not only financial and actuarial design but also governance and ethical oversight. Transparent regulatory frameworks, enforcement of contribution collection, quality assurance in service delivery, and oversight of private complementary schemes are essential to maintain trust, compliance, and system sustainability (CNIL, 2022; Shabo et al., 2022). Furthermore, the aggregation of health data within social insurance systems supports evidence-based policymaking but entails responsibilities regarding data privacy, informed consent, and equitable use (Safran et al., 2021; Wright et al., 2020; De Lusignan et al., 2014).

Digitalization and electronic patient records enhance the efficiency and reach of social insurance schemes but also introduce challenges of interoperability, cybersecurity, and data quality, which must be addressed to ensure reliable protection against health risk (Boonstra et al., 2014; Adler-Milstein & Jha, 2017; Wang et al., 2021). In this context, social health insurance emerges not only as a financial instrument but also as a technologically and institutionally complex system that mediates interactions among patients, providers, regulators, and insurers (Fadlallah et al., 2022; Safran et al., 2021).

4. Health insurance and universal coverage: integrating mandatory and complementary mechanisms

Health insurance systems generally combine two interrelated components: mandatory health insurance and complementary (voluntary) health insurance, which together contribute to comprehensive financial protection against health risks. Mandatory health insurance, typically administered through national social security systems, constitutes the backbone of health risk coverage. It guarantees a defined benefits package encompassing essential healthcare services and ensures broad population coverage, thereby operationalizing principles of solidarity, risk pooling, and redistribution (Barr, 2012; Fadlallah et al., 2022; Wagstaff et al., 2018). Evidence from multiple middle- and high-income countries indicates that mandatory insurance significantly reduces out-of-pocket expenditures, mitigates catastrophic health spending, and contributes to improved equity in access to care (Ekman, 2004; Savedoff et al., 2012; Xu et al., 2003).

Complementary health insurance, in contrast, is offered voluntarily by private insurers. Its primary function is to supplement statutory coverage by reimbursing co-payments, covering services excluded from the public benefits package, or providing enhanced amenities and

elective treatments. From an insurance economics perspective, private health insurance operates on actuarial principles, linking premiums to expected risk and the scope of coverage (Pauly, 1968; Zweifel et al., 2009; Buntin et al., 2011). Empirical studies demonstrate that well-regulated complementary insurance can improve financial protection, increase access to elective or specialized services, and enhance consumer choice without undermining public coverage (Ammenwerth et al., 2020; Fadlallah et al., 2022).

However, complementary insurance also raises equity concerns. In the absence of effective regulation, private insurance may favor higher-income or lower-risk individuals, potentially exacerbating social stratification and creating inequities in access to healthcare (Cutler & Zeckhauser, 2000; OECD, 2019; Dror et al., 2005). This underscores the importance of regulatory frameworks that align private insurance operations with public health objectives, ensuring that complementary schemes reinforce rather than undermine universal access (WHO, 2010; Fadlallah et al., 2022).

Beyond insurance mechanisms, Universal Health Coverage (UHC) provides a normative and operational framework for addressing health risk at the population level. Rooted in the 1948 Universal Declaration of Human Rights, which enshrines the right to health, UHC aims to guarantee that all individuals have access to needed health services without experiencing financial hardship. WHO defines UHC across three dimensions: population coverage, service coverage, and financial protection (WHO, 2010, 2023). By conceptualizing health risk as a collective responsibility rather than an individual burden, UHC emphasizes equity, solidarity, and social justice in health financing. Social and complementary insurance constitute operational instruments for achieving UHC, with mandatory insurance providing the core protective layer and complementary insurance enhancing coverage under regulated conditions (Barr, 2012; Wagstaff et al., 2018; Ekman, 2004).

An integrated understanding of health risk coverage recognizes the interdependence of public health policy, social protection, and insurance economics. While prevention and risk-reduction strategies are essential to limit exposure to health risks, residual risks require robust financial protection mechanisms. Studies across diverse contexts indicate that systems combining strong social health insurance with regulated complementary schemes achieve superior outcomes in terms of financial protection, access, and equity, especially when supported by effective governance, transparent regulatory oversight, and coordination between public and private actors (Buntin et al., 2011; Ammenwerth et al., 2020; Fadlallah et al., 2022; Savedoff et al., 2012).

Finally, as health systems contend with rising costs, aging populations, and the growing prevalence of chronic diseases, the effective management of health risk necessitates continuous adaptation of institutional arrangements. Strengthening governance, improving integration between mandatory and complementary insurance, and aligning coverage with public health priorities are critical to ensuring sustainable, equitable, and resilient health risk protection (OECD, 2020; WHO, 2023; Safran et al., 2021)

5. Health risk coverage in Algeria

5.1. Overview of the health insurance system

Health risk coverage in Algeria is based on a dual system of mandatory social insurance and voluntary complementary private insurance, combining international welfare models with the country's socio-economic realities (Lamri, 2004; MTESS, 2024). This system provides financial protection against illness, maternity, disability, and occupational hazards, while promoting social equity and solidarity. By formalizing access to essential health services and offering income compensation during incapacity, it mitigates the social and economic vulnerabilities associated with health risks. Despite a solid legal and institutional framework, challenges persist, including gaps in coverage, insufficient benefits, and limited development of private health insurance. These issues particularly affect non-salaried and informal sector workers, revealing structural weaknesses in the national social protection architecture (Dror et al., 2005; Wagstaff et al., 2018).

The mandatory health insurance for salaried workers, managed by the National Social Insurance Fund for Salaried Workers (CNAS), forms the backbone of Algeria's social protection. CNAS manages benefits in kind and cash, collects and monitors contributions, coordinates medical oversight, promotes preventive policies, and administers relief funds (Lamri, 2004; CLEISS, 2024). Beneficiaries include salaried employees, apprentices, students, persons with disabilities, war veterans, retirees, and their dependents. Coverage includes illness, maternity, disability, and hospitalization, delivered as cash allowances for income loss or in-kind services, such as consultations, hospitalization, surgery, pharmaceuticals, and dental and optical care.

A co-payment system (20%) helps control medical costs while protecting vulnerable populations through exemptions. Eligibility is tied to employment and contribution history ; for example, daily sickness allowances require a minimum threshold of days worked, while maternity benefits provide 14 weeks of cash allowances and full coverage of medical expenses with prenatal registration and follow-up (Lamri, 2004). CNAS also implements a third-party payment system for chronic conditions, though shortages of medications and delisted

pharmaceuticals highlight implementation gaps (CLEISS, 2024). The mandatory insurance for non-salaried workers, administered by CASNOS, covers self-employed professionals, including traders, artisans, industrialists, farmers, and liberal professions. Coverage is more limited than CNAS: it mainly includes in-kind services for illness and maternity, without cash allowances. Registration and regular contributions are prerequisites. While CASNOS provides formal protection for workers typically excluded from conventional social insurance, the absence of cash benefits exposes them to financial vulnerability during prolonged illness or income loss (Lamri, 2004; Dror et al., 2005). Comparative studies suggest that underinsurance in the non-salaried sector perpetuates income and health disparities, highlighting the need to harmonize benefits across employment categories (Ekman, 2004 ; Wagstaff et al., 2018).

Social protection financing is predominantly structured around employer and employee contributions within a pay-as-you-go (PAYG) framework, which remains the cornerstone of social insurance systems in many countries. Contribution rates are set at 13% for health, disability, and maternity insurance, supplemented by additional levies earmarked for pensions, occupational accident coverage, early retirement schemes, and unemployment insurance. Altogether, these payroll-based contributions raise the total contribution rate for salaried workers to approximately 34.5% (CLEISS, 2024). In addition to contributory revenues, public authorities play a critical role in ensuring system balance by mobilizing complementary funding sources, including reserve funds, penalties for non-compliance, and direct budgetary transfers aimed at covering structural deficits or financing solidarity-based benefits (MTESS, 2024). While the PAYG mechanism promotes intergenerational solidarity by redistributing resources from the active population to beneficiaries, its long-term financial sustainability is increasingly under pressure. Demographic ageing, the rising burden of chronic and non-communicable diseases, and the continuous escalation of healthcare costs significantly strain contribution-based financing, particularly in contexts characterized by labor market informality and limited wage growth (OECD, 2020; Folland et al., 2016). These structural challenges have prompted a growing consensus in the literature regarding the limitations of relying exclusively on payroll contributions to finance social protection. In response, hybrid financing models that combine contributory mechanisms with public subsidies financed through general taxation, alongside risk-adjusted redistribution instruments, are increasingly advocated as more robust and equitable alternatives. Such models enhance vertical and horizontal equity, improve risk pooling across population groups, and strengthen the system's capacity to absorb economic and demographic shocks (Barr, 2012; Wagstaff et al., 2018). By diversifying revenue sources and reducing excessive dependence on labor income, hybrid approaches contribute to greater financial resilience and

long-term sustainability. The table below provides a comparative overview of the two financing regimes, highlighting their respective characteristics, strengths, and limitations.

Table 1. Comparison of the characteristics of the CNAS and CASNOS schemes

Aspect	CNAS (Salaried Workers)	CASNOS (Non-Salaried Workers)
Target Population	Salaried employees (public/private), apprentices, students, pensioners, persons with disabilities, war veterans, dependents (spouse, children, ascendants)	Self-employed professionals: traders, artisans, industrialists, farmers, liberal professions; dependents (spouse, children)
Mandatory Affiliation	Yes, compulsory for all salaried workers	Yes, compulsory for all registered non-salaried workers
Health Risks Covered	Illness, maternity, disability, hospitalization, work accidents, chronic diseases	Illness and maternity only; excludes cash benefits for sickness or work accidents
Benefits in Kind	Medical consultations, hospitalization, surgery, pharmaceuticals, dental and optical care, medical devices, preventive care	Medical consultations, hospitalization, surgery, pharmaceuticals, dental and optical care, maternity care; similar to CNAS but no preventive or occupational benefits
Cash Benefits	Sickness allowance (daily compensation for income loss), maternity allowance (14 weeks), disability pensions, death benefits	Maternity in-kind only; no cash benefits for sickness, disability, or work accidents
Eligibility Conditions	Linked to employment status and contribution history; e.g., 36 days worked over past periods for sickness allowance	Registration with CASNOS and up-to-date contributions; maternity requires at least 9 days of registration prior to care
Co-Payment / Reimbursement	Linked to employment status and contribution history; e.g., 36 days worked over past periods for sickness allowance	Same reimbursement rates as CNAS for in-kind benefits; no co-payment exemptions for cash benefits, since none are provided
Preventive and Public Health Services	Yes, including medical control, preventive campaigns, health education	Limited; mostly restricted to basic medical services for illness and maternity
Financing Mechanism	Shared contributions: employer (11.5%), employee (1.5%), PAYG system; supplemented by government funds and penalties	Fully contribution-based (self-employed); PAYG model; limited state support
Market Integration with Private Insurance	Complementary private insurance available; mostly voluntary and marginal	Complementary private insurance possible but uptake very low; primarily for higher-income or specialized services
Challenges	Sustainability under demographic pressure, co-payment compliance, coverage gaps for informal workers	Limited financial protection due to absence of cash benefits; coverage gaps for dependent family members; low awareness and uptake of complementary insurance

Source: By the authors

Health insurance in Algeria is characterized by a dual institutional architecture that mirrors differences in employment status, income security, and exposure to social and occupational risks. The CNAS scheme, which covers salaried workers, provides a relatively comprehensive package of protection that includes both in-kind healthcare services and cash benefits related to maternity, illness, disability, hospitalization, and occupational injuries. Financing is based on a pay-as-you-go (PAYG) mechanism, pooling contributions from employers, employees, and the state. Beyond financial coverage, the CNAS framework integrates preventive health programs, medical supervision and control mechanisms, and third-party payment arrangements, all of which reduce out-of-pocket expenditures, facilitate timely access to care, and enhance overall financial protection for insured workers and their dependents.

By contrast, the CASNOS scheme, designed for non-salaried workers, offers a more restrictive form of health protection that is largely limited to in-kind benefits for illness and maternity. It does not provide cash compensation for income loss due to sickness, disability, or occupational hazards, thereby weakening its capacity to insure against health-related economic shocks. Access to benefits is conditional upon formal registration and regular contribution payments, which can be particularly challenging for workers with irregular or volatile incomes. Moreover, preventive health services, occupational health coverage, and structured risk management mechanisms are largely absent from the CASNOS system. As a result, non-salaried workers remain more vulnerable to high out-of-pocket payments and face a significantly greater risk of catastrophic health expenditures, reinforcing inequalities in both health outcomes and social protection across employment categories.

Key challenges include coverage gaps for non-salaried and informal sector workers, financial sustainability under PAYG contributions, low uptake of private complementary insurance, inconsistent application of co-payment exemptions, and disparities in service access between urban and rural areas (Dror et al., 2005; Folland et al., 2016; Wagstaff et al., 2018). Policy priorities should focus on:

1. Expanding CASNOS coverage to include cash benefits and additional health risks.
2. Enhancing financial sustainability via risk-adjusted contributions, state subsidies, and optimized fund management.
3. Integrating private insurance with public schemes under robust regulatory oversight.
4. Improving governance, transparency, and digitalization of claims and reimbursements (Safran et al., 2021; Wang et al., 2021).
5. Raising public awareness to encourage preventive health behaviors and risk-sharing.

5.2. Complementary private health insurance

Complementary private health insurance in Algeria operates on a voluntary basis and is primarily designed to cover co-payments, services excluded from public coverage, and enhanced or premium amenities (Pauly, 1968; Zweifel et al., 2009). Despite its potential role in supplementing the public system, this segment remains marginal, accounting for only approximately 0.4% of the personal insurance market. Several factors explain this limited uptake, including the relative adequacy of mandatory public health coverage provided by CNAS and CASNOS, a low level of public awareness regarding the benefits of private insurance, and financial barriers that make such products less accessible to middle- and lower-income populations (CNA, 2024).

Private insurance products in Algeria are typically tailored to cover high-cost and specialized healthcare needs. They include protection against critical illnesses, hospitalization, specialist consultations, diagnostic procedures, maternity care, dental and optical services, medical devices, and emergency medical interventions (CNA, 2022; Lamri, 2004). These offerings provide an additional layer of financial protection and can improve timely access to healthcare services, particularly for higher-income groups who seek enhanced service quality and faster access than what the public system may provide. However, if private insurance remains poorly integrated with public schemes, it risks exacerbating existing inequalities, privileging those with the financial means to afford supplementary coverage while leaving lower-income and vulnerable populations reliant solely on public provisions (Cutler & Zeckhauser, 2000; OECD, 2019; Buntin et al., 2011). Strong regulatory oversight is therefore critical to ensure that private insurance contributes positively to equity, aligns with public health objectives, and complements rather than duplicates public coverage.

The broader Algerian insurance market has experienced sustained growth over recent years, reflecting both the expansion of economic activity and a growing awareness among households and businesses of the importance of financial risk management. According to the National Insurance Council (Conseil National des Assurances – CNA), the total turnover of the Algerian insurance market reached 181.3 billion DZD in 2024, with life and health insurance representing roughly 11.1% of this total. Although modest in comparison with non-life insurance—which continues to dominate the market, accounting for approximately 83% of total premiums—this figure indicates an increasing interest in personal insurance products that act as a complement to social security mechanisms such as CNAS for salaried workers and CASNOS for non-salaried individuals (Atlas Mag.net, 2025). The upward trend in premiums persisted into 2025. In the first half of the year, total insurance premiums reached 99.4 billion DZD, with the life and health insurance segment contributing 12.1 billion DZD.

This demonstrates not only continued growth but also the resilience of this segment amid an overall market expansion of 8.1%. Despite this positive trajectory, the life and health insurance market remains relatively fragmented. Several key domestic and international insurers compete for market share, each employing distinct strategies to attract customers, including the development of products that specifically address gaps in public coverage. The market's fragmentation is further enhanced by the presence of mutual insurance organizations and mixed-capital insurers, although smaller firms sometimes face challenges, including negative growth, due to competitive pressures and market concentration among the largest players.

Overall, the life and health insurance segment in Algeria reflects a combination of growing demand for risk protection, particularly among middle- and upper-income groups, and ongoing structural challenges, such as limited consumer awareness, affordability issues, and the dominant role of mandatory public insurance, which reduces perceived necessity for private coverage among lower-income households. Nevertheless, the sustained expansion of premiums, the entry of new players, and the development of tailored insurance products suggest that the private health insurance market has significant potential for further growth and maturation. The following table summarizes the turnover and market positioning of the main Algerian insurance companies active in the life and health segment:

Table 2. Turnover and market positioning of the Algerian companies of insurance

Rank	Company	Turnover 2023 (DZD '000)	Turnover 2022 (DZD '000)	Growth (%)	Market Share (%)
1	L'Algérienne Vie (AGLIC SPA)	4,058,000	2,897,000	+40.1%	2.48
2	Cardif El Djazair	3,809,000	3,580,000	+6.4%	2.33
3	AXA Assurances Vie Algérie	2,766,000	2,257,000	+22.6%	1.69
4	SAPS (AMANA SAPS)	2,314,000	2,124,000	+8.9%	1.41
5	Caarama Assurance	2,121,000	2,203,000	-3.7%	1.30
6	TALA (Taamine Life Algérie)	1,971,000	1,538,000	+28.2%	1.21
7	Macir Vie	1,395,000	1,299,000	+7.4%	0.85
8	Le Mutualiste	274,000	386,000	-29.0%	0.17
Total (Life & Health)	–	18,708,000	16,284,000	+14.9%	11.44

Source: (Magzines, 2025)

The Algerian life and health insurance market represents a relatively small but steadily growing segment of the overall insurance sector, accounting for approximately 11.4 % of total premiums. This growth reflects both domestic participation and the involvement of international insurers. Leading companies, such as L'Algérienne Vie and Cardif El Djazair, dominate the market, capturing a substantial share of life and health premiums, while other firms, including TALA and AXA, exhibit strong growth rates, indicative of successful market penetration and effective strategies, particularly in complementary health products that fill gaps left by public insurance schemes. The market is further diversified by mutual societies, such as Le Mutualiste, and mixed-capital insurers, although smaller players occasionally experience negative growth due to competitive pressures.

Recent market trends indicate a consistent increase in life and health premiums, driven by both individual and group insurance uptake. In the first half of 2025, premiums reached 12.1 billion DZD, up from 10.5 billion DZD during the same period in 2024, reflecting year-on-year growth of approximately 7.7%. Quarterly data for Q1 2025 show an overall premium increase of 13.3%, underscoring strong demand for risk protection products. Historically, non-life insurance has dominated the Algerian market ; however, regulatory reforms, including the 2011 mandate to separate life and non-life operations, have promoted the development of life and personal insurance products, enabling insurers to specialize and offer clearer, more targeted products.

Several socio-economic factors have supported market expansion. These include the growth of a middle class with higher disposable incomes, increasing awareness of the limitations of public health coverage, and broader corporate adoption of group life and health insurance plans. Insurers are diversifying their offerings with modular solutions—such as hospital cash benefits, critical illness coverage, and group health plans—that complement public schemes, as illustrated by L'Algérienne Vie.

Despite these positive trends, structural challenges persist. Insurance penetration remains relatively low compared with international benchmarks, and life and health insurance continues to constitute a minor portion of overall risk protection. The predominance of mandatory public insurance through CNAS and CASNOS reduces the perceived need for private coverage among lower-income populations, while uneven awareness and cost considerations limit uptake among middle-income households.

Looking ahead, the Algerian life and health insurance market exhibits strong potential for continued growth and consolidation. Strategic initiatives—including raising public awareness about the benefits of private health insurance, promoting product innovation aligned with

demographic and epidemiological changes, and strengthening data collection for actuarial modeling and pricing accuracy—could enhance market efficiency, expand coverage, and support the sustainable development of complementary health and life insurance in Algeria (Atlas Mag, 2024; Algeria Invest, 2024; Me Insurance Review, 2025; Oxford Business Group, 2015; L'Algérienne Vie, 2025).

Table 3. Market share of the insurance companies in Algeria

Rank	Company	2023 Turnover (DZD)	Growth 2022–2023	Market Share (%)
1	AGLIC	4,058,000	+40.1%	2.48
2	Cardif El Djazair	3,809,000	+6.4%	2.33
3	AXA Assurances Vie Algérie	2,766,000	+22.6%	1.69
4	SAPS	2,314,000	+8.95%	1.41
5	Caarama Assurance	2,121,000	-3.72%	1.30
6	TALA	1,971,000	+28.15%	1.21
7	Macir Vie	1,395,000	+7.39%	0.85
8	Le Mutualiste	274,000	-29.02%	0.17
Total	–	18,708,000	+14.89%	11.44

Source: (Magzines, 2025)

5.3. Health coverage in Algeria : between public and private systems

The private health insurance market in Algeria remains marginal, representing only a small fraction of the total insurance sector. This limited uptake can be attributed to several interrelated factors. First, public health coverage provided through mandatory schemes, primarily CNAS for salaried workers and CASNOS for non-salaried workers, meets the essential healthcare needs of a large portion of the population, reducing the perceived necessity for private supplementation. Second, public awareness regarding the existence, benefits, and scope of private health insurance remains low, limiting demand among potential consumers. Third, affordability constraints prevent many middle- and lower-income households from subscribing to complementary insurance, which is often considered a discretionary expense rather than a necessity (Buntin et al., 2011; Ammenwerth et al., 2020).

Despite its limited penetration, private insurance plays a crucial role in enhancing consumer choice and improving access to higher-quality or faster healthcare services. However, because access is largely restricted to higher-income groups, private insurance can exacerbate inequalities in healthcare utilization and outcomes. If not effectively integrated with public

schemes, the proliferation of voluntary private coverage risks creating a two-tier system, whereby wealthier individuals enjoy superior care while economically vulnerable populations remain reliant solely on the public system. This underscores the need for regulatory oversight to ensure equity, fairness, and alignment with national health objectives.

Algeria's health risk management system operates within a dual structure that combines mandatory public insurance with complementary private insurance, reflecting both the principles of social solidarity and the supplemental role of the market. CNAS provides salaried workers with comprehensive coverage, including cash benefits for sickness, maternity, disability, and preventive health interventions. In contrast, CASNOS, which serves non-salaried workers, primarily offers in-kind benefits such as consultations, hospitalization, and certain medical services, leaving these populations more exposed to income shocks during illness, maternity, or disability. As a result, non-salaried workers are significantly more vulnerable to catastrophic health expenditures, highlighting persistent inequities within the system.

The public health insurance system, while foundational, faces substantial structural and operational challenges. Hospitals, particularly in urban centers, are frequently overcrowded, with occupancy rates exceeding 90% in major facilities. Medical staffing levels are approximately 30% below the ratios recommended by the World Health Organization (WHO), contributing to service delays and limited access to specialized care. Additionally, stock-outs of essential medicines affect up to 15% of necessary drugs annually, further constraining service delivery (Fadlallah et al., 2022; Kirati, 2021). These deficiencies undermine the effectiveness of public insurance and reinforce the reliance of higher-income groups on private complementary coverage, which currently accounts for only 0.4% of the personal insurance market (CNA, 2024).

Financially, the public system relies on a pay-as-you-go (PAYG) model, with contributions amounting to 13% of payroll for health, disability, and maternity, while total social contributions reach 34.5% (CLEISS, 2024). Although this mechanism has historically promoted intergenerational solidarity and facilitated access to care, it is increasingly stressed by demographic and epidemiological shifts. Life expectancy has risen to 77.1 years as of 2023, and the prevalence of chronic diseases affects roughly 25% of the adult population (WHO, 2023). These trends exert pressure on revenue collection, cost management, and the long-term sustainability of the system, highlighting the need for more resilient financing mechanisms.

Addressing these challenges requires a multi-faceted policy approach. First, CASNOS benefits should be extended to include cash allowances, preventive services, and coverage for additional health risks, reducing the vulnerability of non-salaried workers. Second, integrating public and private schemes more effectively can minimize duplication, improve risk pooling, and enhance equity, ensuring that voluntary private coverage complements rather than substitutes public insurance. Third, the optimization of contribution collection, fund management, and digital infrastructure for claims processing and reimbursement is essential to improve efficiency, reduce delays, and strengthen governance. Finally, robust public awareness campaigns are necessary to educate citizens about their insurance entitlements, encourage preventive health behaviors, and promote informed decision-making regarding supplementary coverage.

Such reforms are critical not only for improving financial protection and access to healthcare but also for reinforcing equity and sustainability across the system. By combining structural improvements, regulatory oversight, and public engagement, Algeria's health risk management system can adapt more effectively to evolving demographic, epidemiological, and socio-economic realities, ensuring comprehensive, equitable, and sustainable protection for all segments of the population (Wagstaff et al., 2018; Fadlallah et al., 2022; Safran et al., 2021; Wang et al., 2021).

6. Conclusion:

Health risk management constitutes a cornerstone of social protection, as it mitigates the financial and social impacts of illness, disability, maternity, and occupational hazards. In Algeria, this function is achieved through a dual system that combines mandatory public health insurance—with CNAS covering salaried workers and CASNOS serving self-employed individuals—and voluntary private health insurance, reflecting both social solidarity and market-based supplementation.

The public insurance system provides a foundational layer of protection for all workers, ensuring access to essential medical services, maternity care, and, in the case of salaried employees, cash benefits to compensate for lost income. CASNOS extends coverage to self-employed workers but offers limited financial support, leaving significant gaps in income replacement during periods of illness or maternity, and contributing to persistent vulnerabilities among non-salaried populations. Voluntary private insurance, while still a relatively small segment of the market—accounting for approximately 11–12% of total premiums—plays a complementary role by covering specialized care, critical illnesses, and higher-quality services that may not be fully addressed by the public system.

Despite the presence of a well-established institutional framework, Algeria's health risk management system faces structural and operational challenges. Geographic disparities, unequal access to care, hospital overcrowding, supply shortages, low penetration of private insurance, and inconsistent implementation of co-payment exemptions and reimbursement mechanisms continue to undermine equity and efficiency. The market, however, shows dynamism, with leading insurers such as L'Algérienne Vie and Cardif El Djazair driving product diversification and catering to unmet needs, though barriers related to consumer awareness, affordability, and trust limit broader uptake.

Looking forward, ensuring the sustainability and effectiveness of Algeria's health risk management system will require comprehensive reforms. Expanding CASNOS benefits to include cash allowances, preventive care, and coverage for additional health risks is essential to protect vulnerable populations. Greater integration between public and private schemes can improve equity, reduce duplication, and enhance risk pooling. Strengthening regulatory oversight, modernizing claims processing through digitalization, and promoting public education about insurance rights and benefits will further improve transparency, efficiency, and accessibility.

By addressing these structural, financial, and informational challenges, Algeria can enhance equity, financial protection, and social solidarity within its health system. Such measures will not only ensure that salaried and non-salaried workers alike benefit from more comprehensive coverage but also position the country's health insurance framework to respond effectively to demographic, epidemiological, and socio-economic transitions, fostering a resilient, inclusive, and sustainable healthcare environment for all (Wagstaff et al., 2018; Fadlallah et al., 2022; OECD, 2020; Safran et al., 2021).

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