Health Insurance in Algeria: Current Challenges and Future Directions Towards Universal Health Coverage

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ABSTRACT

Algeria faces major challenges in modernizing its health insurance system to achieve Universal Health Coverage (UHC). This research examines the trajectory of Algeria's health insurance system toward Universal Health Coverage (UHC) by analyzing its current structural, financial, and organizational challenges, while proposing evidence-based strategic orientations for reform. Employing a mixed-methods design that integrates secondary quantitative data with qualitative stakeholder analysis and international benchmarking, the study reveals that despite notable progress in formal enrollment, significant gaps persist in coverage of vulnerable populations, inter-agency coordination between CNAS and CASNOS, and long-term financial sustainability. Data show that the revenue to expenditure ratio, currently 1.02, risks declining to 0.87 by 2030 under a business-as-usual scenario. The findings indicate that a successful transition to UHC requires integrated structural reform, innovative and diversified financing mechanisms, and accelerated digitization of administrative systems. Incorporating lessons from post COVID 19 health financing shocks, this research contributes to the academic literature on health systems in North Africa and offers a replicable conceptual framework applicable to middle-income developing nations.

Keywords: health insurance, universal health coverage, Algeria, health policy, CNAS, CASNOS, health system reform.

INTRODUCTION

The fair access to health care is one of the primary human and societal development issues, which are central to the system of United Nations Sustainable Development Goals (SDGs). The concept of universal health coverage (UHC) proposed by the World Health Organization means the delivery of the necessary health care to everyone without putting them under the burden of financial limitations, and is the ultimate goal of the modern health policy development (WHO, 2019). In this international context, Algeria, a country that is categorized by the World Bank as an upper-middle-income country, occupies a particular niche in North Africa, with a changing health insurance framework.

The Algerian health insurance system is a remnant of the post-independence reforms and is at present structured around two main organizations, the National Social Insurance Fund of Salaried Workers (CNAS) and the National Social Security Fund of Non-Salaried Workers (CASNOS). This dual architecture, which theoretically covers more than 87.4% of the population according to, however masks significant disparities in access to care and the quality of coverage (MENDIL,D, 2020). The challenges are multiple: institutional fragmentation, geographical inequalities, financial sustainability in a context of demographic and epidemiological transition, and insufficient coordination between the different actors of the system.

The issue of this research is part of the specific context of the transformations that Algeria has been experiencing since 2019, marked by renewed citizen aspirations and a declared political will to modernize public institutions. The Plan 2020-2024 places health by National Economic Development (Ministres, 2021) among national

priorities, with an explicit goal of improving health coverage. At the same time, budget constraints related to the volatility of energy revenues and the lessons of the COVID 19 pandemic have revealed the structural vulnerabilities of the Algerian health system (Ministres, 2021).

This paper seeks to address an understudied area within the academic literature on North African health insurance models. Although several studies have examined Maghrebian health systems (Brahamia,B, 2010a), few studies have specifically examined the prospects of evolution towards UHC in Algeria through a prospective approach integrating the political, economic and social dimensions. The novelty of this research lies in its rigorous mixed-methods design, combining quantitative analysis of system performance indicators with a structured qualitative investigation of key stakeholders' perspectives, thereby enabling a more nuanced understanding of the institutional, political, and financial complexities at play. Furthermore, this study integrates the post COVID 19 policy context an analytical dimension conspicuously absent from prior Algerian health financing literature.

The objectives of this research are threefold. First, to develop a comprehensive and current diagnostic analysis of the Algerian health insurance system, identifying its strengths, weaknesses, and structural challenges.

Second, to examine the prospects for advancing toward universal health coverage through an international comparison with two countries that have successfully undertaken this transition Morocco and Tunisia. Third, to formulate operational strategic recommendations to guide public decision-makers in designing and implementing UHC-oriented reforms.

This paper is addressed to the international academic community working on health policy in developing countries, to international organizations supporting health system reforms, and to Algerian and regional public decision-makers. Beyond the Algerian case, the lessons of this research can inform debates on the reform trajectories of health insurance systems in middle-income countries in Africa and the Middle East.

Conceptual framework for universal health coverage

Universal health coverage is a central paradigm of contemporary health policies, conceptualized by who around three interrelated dimensions: the extent of the population covered, the range of services included, and the level of financial protection offered (Kutzin, 2013).This three-dimensional approach, formalized in the "UHC cube", makes it possible to assess the progress of health systems towards universality while identifying populations and services left behind.

CSU's work (Reich, M. R, et al., 2016) on political economies highlights the importance of political and institutional factors in reform trajectories. Their comparative analysis on twenty four (24) countries illustrates that effective transitions to universal health coverage depends on three pillars that include strong political leadership, alliance of actors to support the change, and institutions that are prepared to manoeuvre through the complexity of the reforms. This analytical model is especially relevant to explain the workings present in Algeria.

Propose a typology of UHC models based on funding and service organization mechanisms. They distinguish four archetypes: the Beveridgian model (tax financing, public provision) (Savedoff, W. D, de Ferranti, D, Smith, A. L, & Fan,V, 2012), the Bismarckian model (social insurance, mixed provision), the hybrid model (mixed financing, public regulation), and the regulated market model (dominant private financing, strong public regulation). This classification makes it possible to situate the Algerian system in an international comparative perspective.

International experiences in transitioning to UHC

The analysis of international experiences reveals the diversity of national trajectories towards UHC. The case of Morocco, studied by (Heikel, 2020), illustrates a gradual transition through the extension of Compulsory Health Insurance (AMO) and the creation of the Medical Assistance Scheme (RAMED). Their assessment shows significant progress in formal coverage (from 34% in 2005 to 68% in 2022) (Belyagou,Y & Benabdallah,H, 2024), but reveals persistent challenges in effective access to care, particularly in rural areas.

Tunisia presents a different model, analyzed by (Mechergui,N, et al., 2022) with a dual system linking the National Health Insurance Fund (CNAM) for employees and free medical assistance for the poor. The authors highlight the remarkable performance of the Tunisian system in terms of health indicators, but point to the challenges of financial sustainability exacerbated by the demographic transition.

Algerian health insurance system: state of knowledge

Research on the Algerian health system remains relatively limited in the international literature, despite some significant contributions Offers a historical analysis of the evolution of the system since independence (Lamri, 2014), identifying three phases: the socialist period (1962-1989) characterized by an integrated Beveridgian system, the transition period (1990-2005) marked by the separation between funding and benefit, and the contemporary period (since 2005) of orientation towards social insurance.

Proposes a regional comparative approach, examining the health insurance systems of the Maghreb. Their positional analysis places Algeria in an intermediate situation, with performances superior to the Libyan system but inferior to the Moroccan and Tunisian models in terms of efficiency and equity (Ziani,L, 2020).

Clearly describe that the Algerian state takes primary responsibility for public health, with a focus on prevention, equity and access to care for disadvantaged populations (Ouadah & Madani, 2025). Besides, this discussion reveals the importance of investing in the social sphere to support such goals. This detailed presentation of the role of the State constitutes the factual basis that supports this sentence, directly explaining the position and commitment of the State in the field of health in Algeria.

Provides detailed information on reforms implemented in the Algerian health system, particularly with the introduction of Health Law 18/11. In particular, it contains periodic assessments of the health map, which sets the standards for health coverage and the resources to be mobilized. These elements are essential to understand the current health coverage situation in North Africa region and the specially Algeria. Thus, this document provides a solid legislative and organizational framework that supports the analysis of impact studies and reports on health coverage in this geographical area, justifying its choice as a reference for this sentence (Errabih, 2024).

The paper discusses universal health coverage directly and looks at the issue of finances in accordance with the accessibility of care, and people should not be exposed to an extreme health risk. It highlights the need for political commitment, financial sustainability and the pooling of funds, fundamental elements to understand how financing mechanisms, in particular those related to the reimbursement of medicines, can impact the financial share borne by social security and patients. Thus, this document provides a relevant conceptual framework that explains the changes in the financing of pharmaceutical reimbursements and the redirection of the financial burden to policyholders, directly supporting the idea expressed in this sentence (Azri,K & Brahamia,B, 2023).

Gaps identified and contribution of this research

This literature review reveals several gaps in the understanding of the Algerian health insurance system. First, the lack of prospective studies integrating the political, economic and social dimensions of the transition to UHC. Secondly, the lack of in-depth comparative analyses with successful international experiences. Third, the lack of primary data collected from key actors in the system.

This research aims to fill these gaps by proposing a prospective analysis based on an innovative mixed methodology, combining the expertise of field actors and international comparative analysis. Therefore, it contributes to the understanding of the dynamics of health insurance system reforms in middle-income nations.

METHODOLOGY

Methodological Approach and Design

This research adopts a mixed-methods methodological approach inspired by the pragmatic paradigm of Creswell and Plano Clark (2017). This approach combines the strengths of quantitative and qualitative approaches to

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understand the complexity of health insurance systems in both their technical and socio-political dimensions. The chosen sequential exploratory design follows two separate steps; first, an exploratory qualitative phase, followed by a phase of quantitative validation and elaboration.

The theoretical framework is based on the neo-institutionalist approach developed by Hall and Taylor (1997), which makes it possible to analyze public policy reforms through the interaction between formal institutions, actors and their strategies, and the ideas that underpin public action. This analytical framework is especially appropriate to shed light on the mechanisms of change that take place within health insurance systems.

Data collection

Quantitative Data Analysis

The quantitative component is based on the analysis of secondary databases from official sources, including the financial statements of the CNAS and CASNOS for the period 2001–2017, statistics from the Ministry of Health, data from the National Office of Statistics (ONS), as well as international indicators from the World Bank and the World Health Organization (WHO).

This quantitative approach adopts a longitudinal and descriptive methodology aimed at analyzing the evolution of the main financial and social aggregates related to social security and pension schemes. The collected data are processed using statistical and economic indicators, such as the coverage rate, the contributor/beneficiary ratio, and the financial balance of the funds.

Qualitative Document Analysis

The qualitative component is based on an in-depth examination of institutional reports, legislative and regulatory texts, and official publications from relevant national bodies, such as the Ministry of Labor, Employment, and Social Security, the Ministry of Health, and the national social security funds (CNAS and CASNOS). It also includes the analysis of the documents and reports published by the international organizations, including the World Health Organization (WHO) and the International Labor Organization (ILO). In addition, it involves the study of academic books and articles, as well as interviews published in national journals, and official public documents such as reports from the Court of Accounts and reports from the Presidency on the economic and social situation, prepared by the Prime Minister's office. This qualitative approach allows for the interpretation of the contextual, institutional, and governance dimensions that influence the performance and sustainability of social protection and pension systems in Algeria

Post COVID 19 Analytical Framework

The COVID 19 pandemic constitutes a critical stress test for health financing systems worldwide and merits explicit analytical consideration in any contemporary study of health coverage reform. In Algeria, the pandemic period (2020–2022) accelerated pre-existing structural vulnerabilities in several interconnected ways. First, health expenditure by CNAS and CASNOS increased sharply due to expanded hospitalization costs and emergency pharmaceutical procurement, while contribution revenues contracted simultaneously as informal sector activity and formal employment declined during lockdown periods. Second, the pandemic exposed the fragility of a financing model heavily reliant on payroll-based social contributions in a context of economic contraction linked to depressed hydrocarbon revenues. Third, the health crisis generated renewed political attention to coverage gaps for informal workers and rural populations groups proved disproportionately vulnerable to both health and financial shocks. According to the World Health Organization (2022), countries where out-of-pocket expenditure exceeded 20% of total health spending experienced greater catastrophic health spending incidence during the pandemic; Algeria’s rate of 37% places it in a particularly exposed position. This research integrates post COVID contextual analysis and situates its financial projections within a post-pandemic fiscal environment characterized by constrained public revenues and heightened demand for health services. Where disaggregated post-2020 data remain unavailable owing to publication lags in official Algerian statistical sources, trend extrapolations are applied and clearly identified as such.

International Benchmarking

The comparative analysis was conducted using the "most similar systems" design elaborated by Lijphart (1971), which selects comparison cases that share common structural characteristics while differing on the variable of interest. Morocco and Tunisia were selected on account of their geographic and cultural proximity to Algeria, their similar demographic and epidemiological profiles, and crucially their more advanced trajectories toward UHC. For each country, a standardized analytical scorecard was developed covering five dimensions: (1) institutional architecture of insurance bodies; (2) funding mechanisms and financing mix; (3) care delivery modalities and benefit packages; (4) performance indicators (coverage rate, out-of-pocket expenditure, health outcomes); and (5) transferable policy lessons. The objective of this benchmarking is not to advocate for the direct replication of foreign models, but rather to identify enabling conditions and reform sequences that may inform an Algerian reform pathway adapted to its institutional specificities.

Methodological limitations

This research suffers from several limitations. The first comprises the lack of disaggregated data on some units of the system data on actual coverage of rural populations, among others. The second is the collection period, which is highly influenced by the COVID 19 pandemic related restrictions, which made some actors and areas of interest hard to access. The final limitation is, as often is when adopting a political-economic perspective which is the caveat inherent to international lessons transfer due to the highly specific context of Algeria.

RESULTS

Diagnosis of the Algerian health insurance system

Institutional architecture and coverage

The history of the healthcare system in Algeria begins with the colonial period, but after independence in 1962, the country had to rebuild its system, marked by a massive exodus of qualified personnel and insufficient infrastructure. The system evolved through reforms aimed at unifying social security starting in the 1970s and saw the creation of new infrastructure and the introduction of free healthcare in 1974. More recently, the system has seen an improvement in health indicators, although it faces persistent challenges related to the private sector, a shortage of doctors, and structural weaknesses in responding to health crises (Lamri,L, 2001).

The Algerian health insurance system has a dual architecture inherited from the reforms of the 1980s-1990s. The CNAS, created in 1985, covers salaried workers in the public and private sectors as well as their beneficiaries, representing approximately 30 million beneficiaries in 2025 according to official data. CASNOS, established in 1992, supports self-employed workers (professionals, farmers, artisans) and their families, approximately 1.8 million people.

Table **1** shows the evolution of the population coverage rate in Algeria between 2001 and 2017. Looking other data, it appears that Algeria has more than 14 million social security beneficiaries. Taking into account the beneficiaries, nearly 30 million people would be covered, or about 63 % of the total population in 2025.

Table 1: Evolution of the number of insured persons in Algeria (2001-2017)

Years	CSNOS social security beneficiaries			CNAS social security beneficiaries	
	Number of active affiliates	Number of up to date contributors	Number of retirees	Number of social security beneficiaries	Including employees in %
2001	558 473	303 676	134 908	4 873 699	76,46
2002	604 621	298 069	145 468	4 872 715	71,28
2003	646 785	305 604	156 070	4 055 243	84,48

2004	680 543	286 718	169 284	6 369 266	55,08
2005	720 090	291 776	177 891	6 756 271	52,8
2006	765 940	303 164	185 791	6 816 052	54,18
2007	819 821	329 003	194 730	7 337 372	51,93
2008	877 329	365 858	198 991	7 800 320	52,69
2009	941 825	393 176	209 796	8 346 692	57,37
2010	1 011 435	424 162	211 359	8 494 919	57,22
2011	1 123 932	437 132	215 517	8 819 160	57,27
2012	1 250 075	472 787	223 121	9 288 143	57,41
2013	1 287 463	533 679	231 466	9 917 243	57,21
2014	1 381 029	582 223	239 403	10 626 369	55,88
2015	1 493 629	643 997	243 241	11 342 779	54,01
2016	1 721 756	915 934	277 700	11 957 202	51,35
2017	1 806 124	794 118	289 356	12 316 693	47,69

Source: Table produced by us from data from the National Statistics Office, 2016 edition, p. 22 and 23, 2017 edition, p. 22, 23 and 2018 edition, p. 19.

Financial situation and sustainability

Until the early 1980s, the financial situation of the various pension funds in Algeria was considered excellent because it did not show any deficit. The stability of the major economic factors that were supported by a significant increase in oil prices is the essential reason that pushed the State to engage in major actions without seriously harming the main resources of the organization. (Kara Terki, 2010) From the 1990s, the social security system began to experience serious financial difficulties due to the socio-economic changes that the country has experienced. The implementation of the structural adjustment programme (SAP), which resulted in particular in the abolition of price support (including that for medicines) and the decline in productive employment in the industrial sector, led to a profound change in the balance of the system (Zehnati, 2008). The financial situation of the social security funds has improved considerably since 2000, particularly for the CNAS. The latter is a privilege of the economic situation that has characterized the Algerian economy for this period, an increase in hydrocarbon prices.

Table 2: Financial balance of health insurance management funds in Algeria (2001-2017)

Years	**CASNOS**			**CNAS**		
	Incomes	**Expenses**	**Balances**	**Incomes**	**Expenses**	**Balances**
2001	9065	8819	246	88 174	80 605	7569
2002	10 121	9464	657	104 771	98 719	6052
2003	9543	10 306	-763	115 331	106 431	8900
2004	10 092	11 700	-1608	137 144	128 659	8485
2005	10 588	12 993	-2405	169 703	159 711	9992
2006	11 634	13 497	-1863	162 429	160 858	1571
2007	14 545	15 385	-840	176 930	167 285	9645
2008	17 146	17 497	-351	217 423	191 726	25 697
2009	19 095	17 739	1356	237 280	187 104	50 176

2010	23 668	20 236	3432	290 835	209 742	81 093
2011	25 494	23 558	1836	374 138	240 607	133 531
2012	30 789	26 619	4170	477 285	280 753	196 532
2013	35 555	31 612	3943	429 840	322 523	107 317
2014	38 572	38 196	376	459 757	374 060	85 696
2015	43 709	41 256	2 453	474 944	395 395	79 549
2016	71 780	45 349	26 431	482 065	400 553	81 512
2017	63 895	49 073	14 822	492 340	435 227	57 113

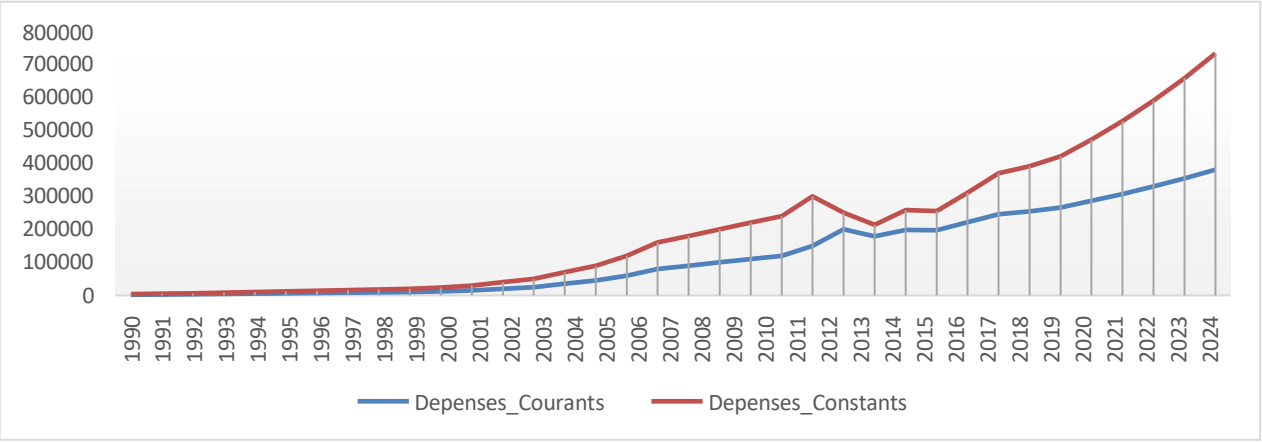
Unit: million DA

Source: Table produced by us from data from the National Statistics Office, 2016, 2017 and 2018 edition, p. 20 , 21 and 18.

Analysis of health insurance expenditure in Algeria

Health insurance, through its two funds (CNAS and CASNOS), faces a constant increase in expenses stimulated by various factors, and particularly by the effects induced by the health transition, the extension of public and private supply as well as by the vagaries of the drug market, which remains difficult to control, regardless of the policies implemented in this direction (Brahamia,B, 2010a).Indeed, the analysis of health insurance expenditure indicates that it has been increasing steadily since 1990, at an accelerated pace. They have increased nearly 60.86 times in the space of 26 years (from 65 Billion Dinars in 2015 to an estimated de plus de 132 Billion Dinars in 2025). In constant dinars, health insurance expenditure also recorded a considerable evolution; however, this evolution is less than the evolution of health insurance expenditure in current dinars (Figure N°1).

Figure 1: Evolution of CNAS health insurance expenses in million DA



Source: Graph made by us from:

- Data collected from the Directorate General of Social Security (DGSS).

The health expenditure structure of the social insurance branch

In the following, we will review the expenditure structure of the social insurance branch where sickness risk is the main risk covered. We therefore look at the main expenses of this branch: these are the hospital package, transfers for care abroad, drug reimbursements and daily allowances.

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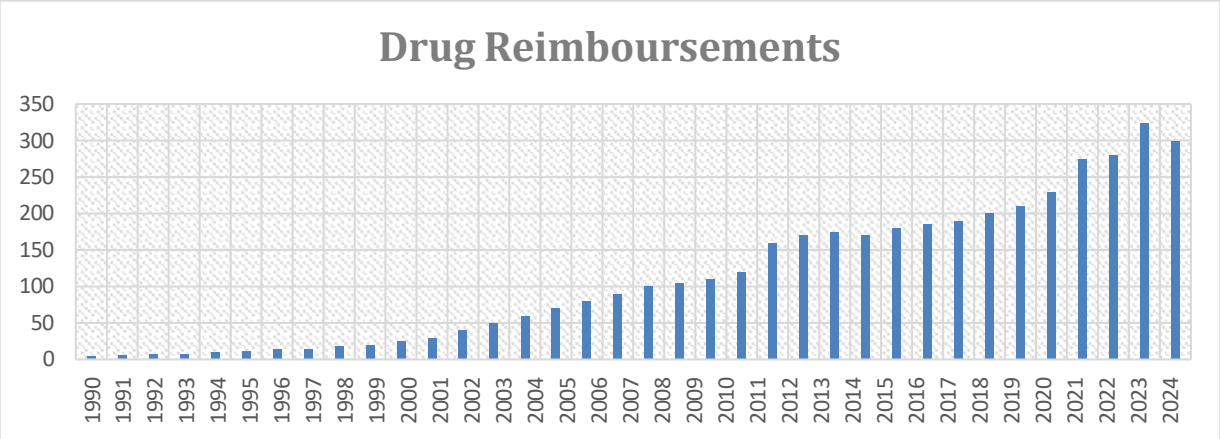
Drug reimbursements

Drug reimbursement is the largest item of expenditure of the CNAS, accounting for 7.45% of expenditure in 1990. In 2025, it reached 87.5% of total health insurance spending and continues to increase, at an accelerated pace. This expenditure has undergone a continuous evolution, increasing from DZD 0.94 billion in 1990 to DZD 190 billion in 2016 and projected to 300 billion of dinars at 2025 (Figure 2) . This change in reimbursements is mainly due to the increase in drug prices, following successive currency devaluations, as well as the increase in the number of insured persons.

Figure 2: Evolution of drug reimbursements in Algeria in billion DA



Source: Graph made by us from:

- Data collected from the Directorate General of Social Security (DGSS).

The growth in reimbursement expenses can also be explained by the increase in the number of reimbursable molecules. Indeed, the data in Table 38 indicate that the number of IBDs is continuously increasing from 897 IBDs in 2000 to 1 365 in 2012. The number of brands reimbursed by the CNAS also increased over the period from 2300 brands to 4 500 brands between 2000 and 2012 to 7500 brands in 2025.

Table 3: Structure of drugs reimbursable by the CNAS (2000-2025)

Years	International Brands Determination	Number of brandings
2000	897	2300
2007	1134	3000
2008	1198	3138
2009	1300	-
2010	1344	4000
2012	1365	4500
2015	1571	5192
2020	1927	6343
2025	2275	7500

Source: Table made by us from:

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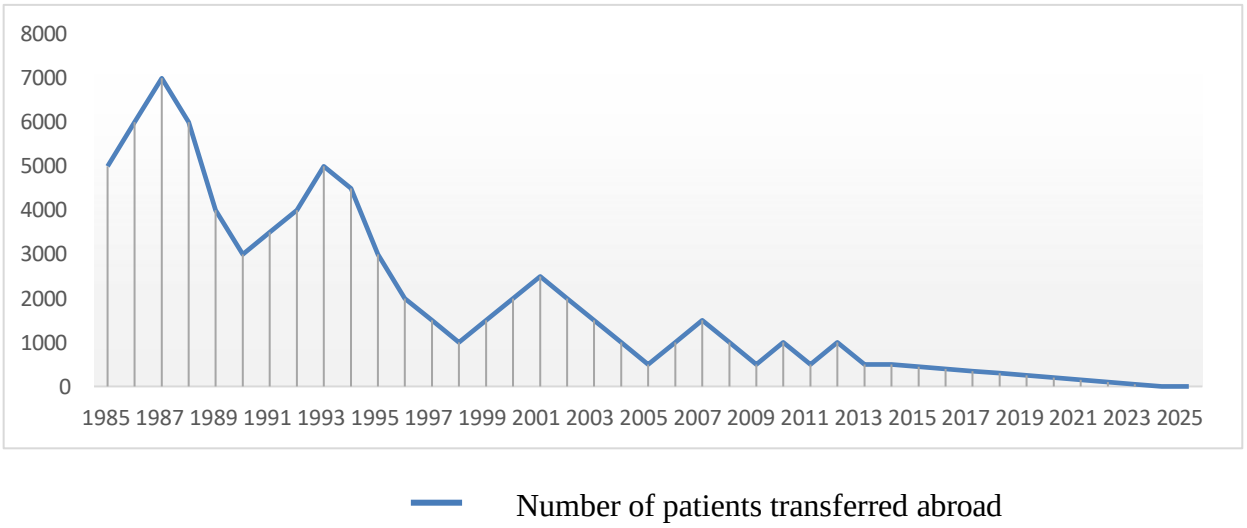
- Brahamia B. (2008), "Quel alternative de financement de l 'assurance maladie dans la transition sanitaire en Algérie",
- Snoussi Z. (2017), "Les faux réponses à l 'augmentation des dépenses de remboursement des médicaments en Algérie", *In Les évolution récents du système de santé algérien*, Edition CREAD, p. 86.
- Data collected from the Directorate General of Social Security (DGSS).

Transfers for care abroad

Transfers abroad decreased from 6,300 patients in 1985 to 2,100 patients in 1990, a decrease of 66.66% due to the economic crisis experienced by the country during the 1980s, and to the decrease in hydrocarbon export revenues during this period, then doubled from 2,100 in 1990 to 4,539 in 1994. From 1995 to 2025, they again experienced a considerable decline, from 2411 to 72 respectively (Figure3). This decrease is the result of measures taken by the public authorities to reduce spending on care abroad, through the reduction in the number of pathologies eligible for transfers, the diversification of host countries and the encouragement of foreign medical teams to come to Algeria. Nevertheless, the expenses related to this item continue to increase: they have doubled in the space of 14 years from 0.76 billion DA in 1985 DA to 1.5 billion DA in 2009 due to the fact that the care provided abroad concerns serious diseases requiring high costs but in 2025 is decreased to 0.685 billion dinars.

Figure 3: Evolution of transfers for care abroad in Algeria



Source: Graph made by us from:

- Data collected from the Directorate General of Social Security (DGSS).

The hospitals package

Since 1974 and under the law on free medicine in Algeria, social security has been called upon to contribute to the financing of the operating budget of health institutions through a flat-rate contribution fixed annually under the finance law. These budgetary provisions, called "hospital packages", are a financial obligation supposed to compensate for the health benefits provided to insured persons and their beneficiaries (Kara Terki, 2010, p240). Since its establishment in 1973, the hospital package has seen a steady increase. Indeed, it increased from 120 million DA in 1973 to 27,021 million DA in 2004, a multiplication by 225.17 in the space of 31 years. This increase in the hospital fee is due, on the one hand, to the gradual disengagement from the State budget, and on the other hand, to problems related to the determination of the actual amount of benefits provided to insured persons and their beneficiaries in terms of hospitalization and care provided. Since 2005, when the contractualisation process was set up and started, the fixed fee for hospitals has been set at 35,000 million DA. In 2025, it rose to 150,000 million DA (Figure 4), which remains high despite the implementation of the contracting process.

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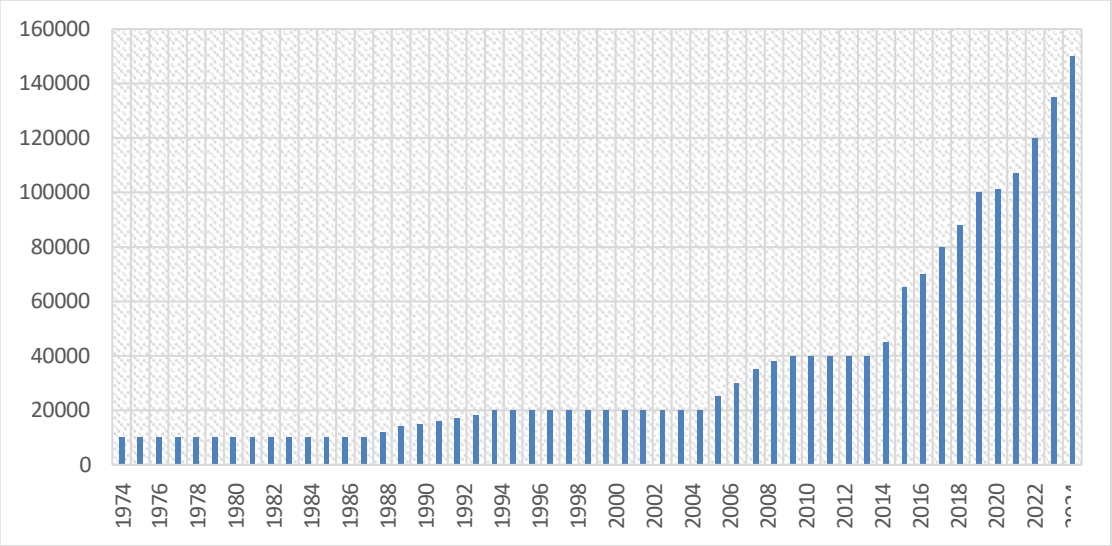
Figure 4: Evolution of the hospital package in Algeria in million DA



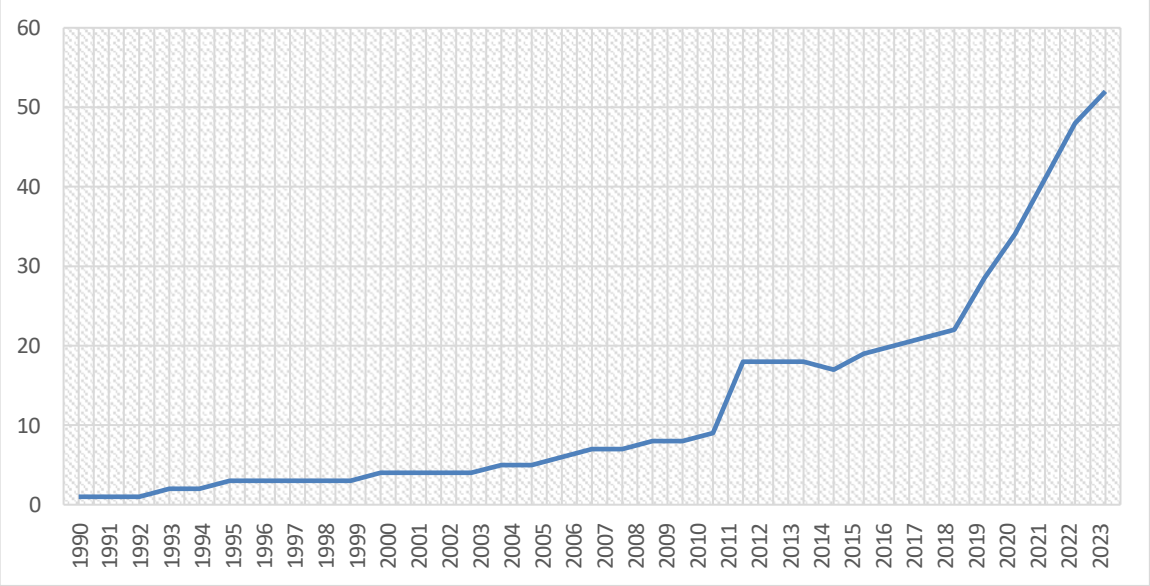
Source: Graph made by us from:

- CNES (2001), "The evolution of social protection systems and the prospects, conditions and modalities for ensuring their financial balance", 18th plenary session, June 2001. p. 75.
- Data collected from the Directorate General of Social Security (DGSS).

Per diems

Expenditure on the CNAS per diem item increased from DZD 1.34 Billion in 1990 to DZD 18 Billion in 2015, a 13.42 -fold increase during this period. In 2016, 14,774,568 daily allowances relating to work stoppages reimbursed by the CNAS, representing 17.3 billion DA, compared to 15,127,391 reimbursed in 2015 with an amount of 18 billion DA. In 2019, more than 28.5 billion DA spent due to a terrible increase in short and medium term sick leave due to quarantine or infection with the COVID 19 pandemic. The increase continued until 2025, where it estimated at 52.5 billion DA, due to the inclusion of successive increases in wages subject to contributions (Figure 5).

Figure 5: Evolution of per diem expenses reimbursed by CNAS in Billions DA



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The Effects of Increased Expenditure on the Health Insurance System

The exponential evolution of health spending is related to a series of factors, including the double transition (epidemiological and demographic) that has characterized the Algerian economy. The epidemiological transition and the demographic transition have had the effect of changing the morbidity and mortality profiles in the country. These involve considerable effects on the health insurance system. The most significant are (Lamri,L, Monographie de l'assurance maladie en Algérie, 2001):

- Increase in the overall burden of disease and chronic disabilities due to severe diseases, which causes an increase in care costs, especially those of drugs supported by health insurance. The ageing of the population will weigh heavily on the social security system and in particular on the health insurance sector.

- The increase in health insurance expenses and the disengagement of the State will result in a greater participation of households in the financing of the health insurance system.

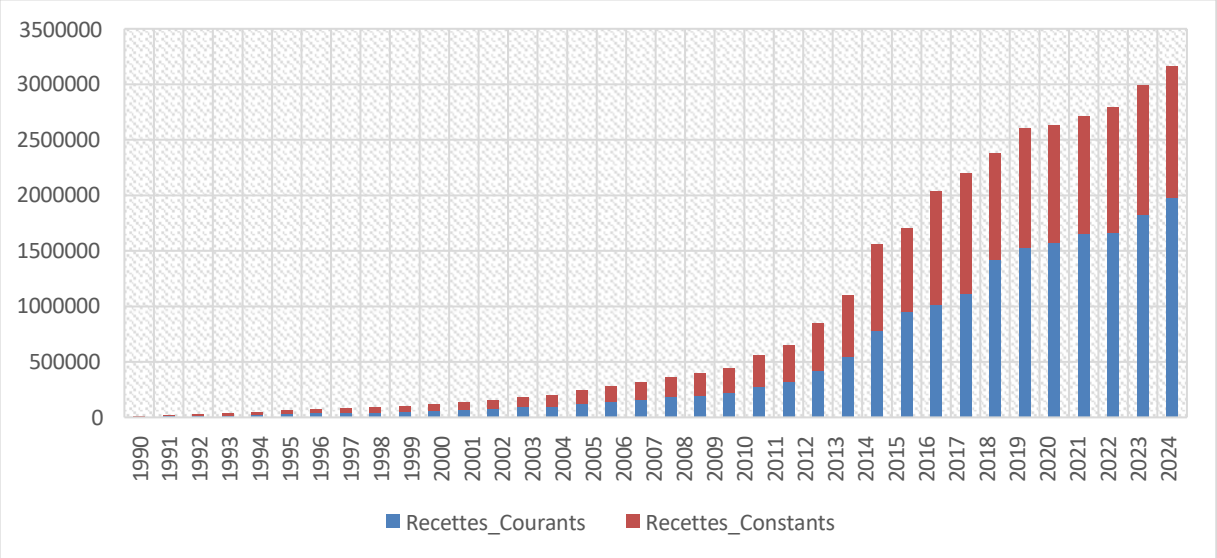
Analysis of CNAS health insurance receipts

In Algeria, the financing mechanisms of the social security system are mainly based on social contributions based on income from employment. This method of professional financing makes social security particularly dependent on changes in its economic and social environment.

Evolution of CNAS health insurance revenues

Health insurance receipts are integrated into total social insurance receipts; the latter have seen a clear increase in current dinars. Over the period 1990-2025, they multiplied by 44. It exceeded 45 billion DA in 1990 and 1 980 billion DA in 2025. This remarkable trajectory reflects the enormous expansion in the population's income. In constant dinars, social insurance receipts increased less, only 29.62 times between 1990 and 2025. To bring in 1181.8 billion DA in 2025 compared to 40 billion DA in 1990 (Figure 6). However, even if revenues have increased significantly, they can no longer keep up with the "explosion" of spending. The difficult economic recovery, the persistence of high levels of unemployment, the development of informal activities that escape contributions, the continuing restructuring of public enterprises resulting in reductions in the number of employees and the explosion in health costs are all elements that have a strong negative impact on the financial equilibrium of health insurance.

Figure 6: Evolution of social insurance receipts in Algeria in million DA



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Sources of funding for health insurance revenues

The sources of funding for social insurance consist mainly of contributions, the state budget and additional resources.

Contribution-Based Revenues

For salaried employees, the single contribution rate is 34.5% of the salary subject to contribution as defined by law. Table 4 gives the breakdown of contribution rates by covered risk.

Table 4: Breakdown of contribution rates in Algeria as of January 1, 2024

Subject	Responsibility of the Employer	3% to be borne by the employee.	At the expense of the fund of Social work	Total
Social insurance: sickness, maternity, Invalidity, old-age and decease	11.5%	1.5%	-	13%
Work-related accidents and occupational illness	1.25%	-	-	1.25%
Retirement	11%	6.75%	-	
Unemployment Insurance	1%	0.5%	-	1.5%
Early retirement	0,25%	0,25%	-	0.5%
Public Housing	-	-	0.5%	0.5%
Public Housing	25%	9%	0.5%	34.5%

Source: Table produced by us using data from the Centre for European and International Social Security Liaisons (CLEISS), available on the internet at: *http://www.cleiss.fr*

For non-employees, the rate of the overall contribution payable by them is 15% calculated based on annual taxable income or, failing that, turnover or in some cases on the basis of the annual minimum national of global salary “SNMG”. This rate is divided equally (7.5%) between social insurance and retirement. For inactive special categories, the contribution rate charged to the state budget varies between 1% and 7% of the minimum national of global salary “SNMG”. For special active categories: the contribution rate and base depends on the specificity of the activity and the basket of services provided.

The data in Figure 7 shows that the bulk of contributions come from state-owned enterprises and government. The share of private sector insured persons relative to the total social insured persons of the CNAS comes in third place, behind public companies and the administration. This situation is explained by the fact that private employers resort to non-declaration practices by their employees to avoid paying social security contributions, in particular the agricultural sector, which no longer declares its employees.

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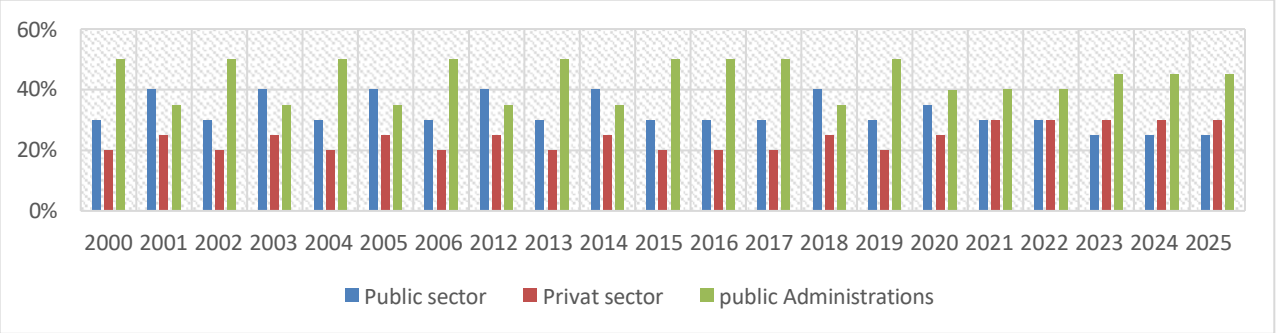
Figure 7: Evolution of the sources of financing of health insurance funds in Algeria



Source: -Kassa F. (2009), "Essai d 'analyse des dépenses d 'assurance maladie en Algérie", *dissertation by Magister in Economics*, University of Bejaia, p. 130.

- Data collected from the Directorate General of Social Security (DGSS).

Intervention of the State budget

The State participates in the financing of the social security system by:

- ✓ The financing of family allowances;
- ✓ The coverage of national solidarity expenses - non-contributory rights (supplements and allowances paid to small pensions and retirement allowances - minimum pensions and allowances, exceptional increases in pensions, contribution differentials for the promotion of employment and investment, etc.).

Indication of additional requirements

In order to mobilize new resources for the social security system, reforms of the financing of the system were introduced, from 2006, through the finance laws. These are new so-called additional resources from taxation (taxes and levies on the proceeds of oil taxation and on products related to social security expenditure. It is within this framework that were carried out:

- ➢ **The national pension reserve fund,** created in 2006 and funded annually by 3% of the amount of oil taxation.
- ➢ **The national social security fund:** The financing of the financial imbalance of the social security bodies, the National Social Insurance Fund for Employees (CNAS), the National Social Security Fund for Non-Employees (CASNOS), as well as that of the National Pension Fund (CNR), will be made up by the National Social Security Fund (FNSS), whose monitoring and evaluation modalities as well as the nomenclature of income and expenditure have been published in the Official Journal No.55 dated July 14, 2021.

3) Factors limiting the level of health insurance revenues

As noted above, the system's funding mechanisms have not varied. They are mainly based on social security contributions. These are still insufficient to absorb the large amount of expenditure. The reasons for this are mainly due to the narrowing of the contribution base, the mismatch between the contribution rate and the range of benefits guaranteed by the system and constraints in the collection of contributions.

A. Shrinking contribution base

The difficult economic recovery, the high level of unemployment, especially among urban youth, the low guaranteed minimum national wage (24,000 DA in 2026) as well as the expansion of the informal sphere have led to a reduction in the number of contributors and therefore a decline in revenues.

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B. Mismatch between the contribution rate and the range of benefits guaranteed by the system

Extended to almost all social categories, the Algerian social security system suffers from the mismatch between relatively low contribution rates, especially for special categories in large numbers and the importance of expenditure on care for these categories (Lamri, L, 2004).

C. Constraints in the collection of contributions

In Algeria, despite the various legal procedures made available to the social security for the recovery system to be efficient and in accordance with Law No. 99-10 of 11 November 1999, it has proved to be ineffective. To date, the contribution rate for the CNAS is 34.5% of salary and that of CASNOS 15% of income. But the funds are facing a shortfall: the actual contribution rate is significantly lower than the required rate. The potential revenues of the CNAS would theoretically be 34.5% of the payroll, but the result of this theoretical equation does not necessarily coincide with the actual revenues of the CNAS. The CNAS then suffers a loss of income because a large proportion of employees (33% according to the National Office of Statistics, 2011) are not affiliated to social security and their salary is therefore not subject to contribution. This is also the case for CASNOS, which suffers in its operation from the low collection of contributions from self-employed workers (Merouani ,W, El Moudden ,C, & Hammoudi,N, 2014)

The actuarial projections made as part of this research indicate a growing structural deficit if no reform is undertaken. The revenue/expenditure ratio, currently 1.02, could fall to 0.87 in 2030 under the trend scenario, requiring budget transfers from the State estimated at 2.1% of GDP.

Structural challenges identified:

Institutional fragmentation

The qualitative analysis reveals that institutional fragmentation is one of the major obstacles to the efficiency of the system. This fragmentation generates high administrative costs and unequal treatment among policyholders.

Geographical and social inequalities

The data collected highlight significant disparities in access to care by region and socio-professional category. The rate of recourse to specialized care varies from 1 to 4 between the wilayas of the north and those of the south, reflecting both inequalities in the provision of care and residual financial barriers.

Table 5: Access to care indicators by region in 2022

Region	Medical density (/10,000 inhab.)	Specialized recourse rate (%)	Remaining medium load (DA)
North	12.4	34.2	8,450
Plateau	8.7	22.1	12,300
South	6.2	14.8	18,750

Source: Table made by us from:

- Data from the Directorate General of the CNAS of Algiers.
-

Epidemiological transition and disease burden

The epidemiological transition is one of the major challenges of the Algerian health insurance system. Non-communicable diseases now account for 60.8% of overall mortality, marking a definitive shift in the national health profile. This development reflected in an increasing prevalence of costly chronic pathologies in terms of management.

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Table 6: Prevalence of major NCDs in Algeria

Pathology	Global prevalence	Prevalence 18-29 years	Prevalence 60-69 years
Diabetes	9%	4%	25.7%
Arterial hypertension.	23.6%	8.5%	62%
Cancer (incidence)	1/100,000	-	-
at least one	20% (>15 years)	-	-

Source: Table made by us from:

- Data from the Directorate General of the CNAS of Algiers.

This epidemiological evolution generates increasing pressure on health insurance expenses, chronic pathologies requiring prolonged treatment and regular medical follow-up. The financial impact is particularly visible in the explosion of drug spending, which now represents the first item of expenditure of the CNAS.

Prospects for progress towards UHC

Forward-looking scenarios

Three evolution scenarios were developed from the data and international benchmarking:

Scenario 1 - Trend change: Maintenance of the current architecture with parametric adjustments (increase in contributions, progressive extension of coverage). This scenario results in 92% coverage in 2035 but with precarious financial sustainability.

Scenario 2 - Moderate reform: Progressive unification of insurance plans with maintenance of the contributory system. Creation of an equity fund for vulnerable populations. Universal coverage achieved in 2032 with an estimated cost of 2.8% of GDP.

Scenario 3 - Ambitious reform: Transition to a unified system of UHC funded by general taxation, inspired by the Beveridge model. Universal coverage in 2028 but requiring a complete overhaul of the financing system.

Feasibility conditions

The analysis of the data reveals a consensus on the need for reform, but divergences on the modalities. Actors identify four preconditions for a successful transition to UHC: (1) political leadership at the highest level, (2) broad stakeholder consultation, (3) a significant increase in public health financing, and (4) modernization of information and management systems.

Discussion

Lessons from international benchmarking

Morocco: Since 2005, Morocco has undertaken an ambitious reform towards universal health coverage with the Compulsory Health Insurance (AMO) for the public and private sectors, and the Medical Assistance Scheme (RAMED) for the poor. In 2024, the country is progressing towards the unification of these schemes with a coverage rate reaching about 70% of the population (Belyagou,Y & Benabdallah,H, 2024). However, only 23% of Moroccans say they are completely satisfied with their health system in 2020 (Heikel, 2020).

Tunisia: she has a system based on the Caisse Nationale d 'Assurance Maladie (CNAM) offering relatively extensive coverage. The Tunisian system has similarities with the Algerian model but with better integration of the different regimes and more developed financial protection. Nearly four in 10 Tunisians (37%) believe that

the government's performance in improving basic health services is “somewhat good” or “very good”, while the majority (61%) consider it inadequate. Residents of the Northeast (47%), the over 55s (40%) and the more affluent (39%-40%) are more likely to express satisfaction with this than their respective counter parts (Missaoui,A, Mezlini,I, & Meddeb,Y, 2025).

Table 7: Key Indicator Comparison in 2022

Indicator	Algeria	Morocco	Tunisia	Who Recommendation
population coverage	87%	62%	68%	100%
Household out-of-pocket payment	37%	32%	32%	< 20%
health expense / GDP	6.3%	5.8%	7.2%	> 6%
System Satisfaction	-	23%	-	>80%

Source: Table made by us from:

- Data from the Directorate General of the CNAS of Algiers.
- Belyagou,Y & Benabdallah,H, 2024, Models of success in universalizing health coverage and the case of Morocco, page 101-125.
- Missaoui,A, Mezlini,I, & Meddeb,Y, 2025, Tunisians support universal access to care and point to persistent challenges,page 1-17.

Benchmarking reveals common patterns in successful transitions to UHC. The case of Morocco illustrates the importance of a graduated approach, with a gradual extension of coverage mechanisms (AMO then RAMED). Tunisia demonstrates the effectiveness of a well-coordinated dual system.

Three success factors emerge from this comparative analysis: (1) the ability to mobilize substantial additional financing (average increase of 1.5 GDP points), (2) the existence of effective regulatory institutions, and (3) the adaptation of reforms to the specificities of the national context.

Implications for Algeria

Applied to the Algerian context, these lessons suggest several strategic orientations. First, a sequential approach seems more realistic than a "big bang" reform, given the institutional complexity and potential resistance. Secondly, the unification of information systems is an essential technical prerequisite for any major reform.

Third, diversification of funding sources needed to reduce reliance on social contributions and improve redistribution. The introduction of a health tax on financial transactions, successfully tested in several countries, could be an innovative avenue for Algeria.

Challenges specific to the Algerian context

Algeria has specificities that complicate the transition to UHC. The rentier economy generates volatility in public resources that complicates long-term planning. The importance of the informal sector (estimated at 35% of the economy in 2025) poses particular challenges for extending coverage to undeclared workers.

Moreover, the data reveal corporatist resistance from certain interest groups, particularly in the private health sector, which fears stronger regulation. These resistances require an appropriate change management strategy grounded in transparent communication and equitable compensation mechanisms. The COVID 19 pandemic added a further layer of complexity to this already challenging context. It simultaneously increased the urgency of reform by demonstrating the system’s incapacity to absorb large-scale health shocks while constraining the

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fiscal space available to fund it. Post-pandemic, Algeria faces a dual imperative: restoring the financial equilibrium of CNAS and CASNOS in the short term, while simultaneously investing in the structural reforms necessary for long-term UHC sustainability. International evidence from comparable contexts suggests that crisis periods, despite their fiscal constraints, can serve as critical junctures that create the political will necessary for otherwise path-dependent systems to undertake transformative reform (Reich et al., 2016). Algeria's leadership would do well to seize this window of opportunity.

Strategic recommendations

Short-term recommendations (2026-2027)

Unification of information systems: Develop an integrated policyholder management platform allowing interoperability between CNAS, CASNOS and other regimes. This modernization, estimated at $250 million, is the technical foundation of any subsequent reform.

Targeted extension of coverage: Create a specific scheme for informal workers and vulnerable populations, funded by a national solidarity contribution. This measure could bring the coverage rate to 92% by 2027.

Improved governance: Establish a national health insurance regulatory agency responsible for coordinating the various bodies and defining the quality standards of services.

Medium-term recommendations (2027-2032)

Financing reform: Diversify sources of financing by introducing taxation dedicated to health (tax on harmful products, contribution on financial transactions). This reform would reduce the share of social contributions from 78% to 60% of total funding.

Progressive unification of plans: Harmonize care baskets and reimbursement arrangements between CNAS and CASNOS, preparing for a subsequent institutional merger.

Preventive medicine development: Strengthen prevention and screening programs to control the evolution of health costs, particularly in the field of chronic diseases.

Long-term vision

Transition to UHC: Create a unified national health insurance system guaranteeing universal access to essential care, financed by an optimal mix of social contributions (40%), general taxation (45%) and specific contributions (15%).

Conclusion

This research made it possible to analyze the prospects for the evolution of the Algerian health insurance system towards universal health coverage, revealing both the structural challenges and the opportunities for reform. The international comparative analysis demonstrates that the transition to UHC, although complex, remains feasible in the Algerian context subject to strong political commitment and an appropriate reform strategy.

The main results of this study highlight that the Algerian system, despite its honorable performance in terms of formal coverage (85.3%), suffers from significant gaps in effective access to care and financial sustainability. Institutional fragmentation, geographical inequalities and over-reliance on social contributions are the major obstacles to overcome.

The recommendations made are based on a sequential and pragmatic approach, initially focusing on the modernization of management tools and the targeted extension of coverage, before considering a more ambitious structural reform. This strategy, inspired by international best practices, could allow Algeria to achieve universal health coverage by 2032-2035.

Beyond the Algerian case, this research contributes to the understanding of the dynamics of reform of health insurance systems in middle-income countries. It underlines the importance of contextual factors in defining reform trajectories and the need to adapt international models to national specificities.

Limitations of the research and future perspectives

This research has several limitations that should be acknowledged. The limited availability of disaggregated data on some aspects of the system constrains the accuracy of some analyses, particularly regarding effective access to care for rural populations. The financial projections, although based on proven methodologies, remain sensitive to the assumptions made regarding demographic and economic developments.

Moreover, the transferability of international policy lessons remains conditioned by the specificities of the Algerian context, in particular the structure of the rentier economy and the importance of the informal sector. Further research will be needed to refine certain aspects, including the impact of proposed reforms on equity of access to care and their social acceptability.

Future research perspectives could shift towards ex-ante assessment of the distributive impacts of proposed reforms, the development of more sophisticated modelling tools integrating actors' behavioural dynamics, and in-depth benchmarking with other countries in the MENA region that have undertaken similar reforms.

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