



Actors' Logics and Malaria Prevention and Control Programs in The Masina Health District in Kinshasa

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Abstract

Malaria remains one of the leading causes of morbidity and mortality in the Democratic Republic of Congo (DRC), despite the implementation of multiple prevention and control programs supported by the State and technical and financial partners. In densely populated urban areas such as Kinshasa, particularly in the Masina health district, the persistence of high transmission raises questions about the actual effectiveness of implemented interventions. This situation suggests that biomedical and technical factors, although necessary, are insufficient to explain the observed outcomes.

This study adopts a socio-anthropological and institutional approach, focusing on the analysis of actors' logics involved in the design, implementation, and appropriation of malaria prevention and control programs. Through a mixed methodology combining documentary analysis, semi-structured interviews, and field surveys, the study highlights the coexistence of sometimes convergent, often competing logics among institutional actors, healthcare providers, technical partners, community leaders, and beneficiary populations. The results show that divergences in interests, representations, and rationalities significantly influence the performance of antimalarial interventions. The study advocates for better integration of local and community dynamics in the governance of malaria control programs.

Keywords: Actors' logics, Malaria, Prevention, Health programs, Governance, Masina, Kinshasa, DRC

Introduction

Global Context of Malaria Control

Malaria remains one of the deadliest parasitic diseases in the world, despite significant progress over the past two decades. According to the World Malaria Report 2024 from the World Health Organization (WHO), approximately 249 million malaria cases and 608,000 deaths were recorded worldwide in 2022, with over 95% occurring in sub-Saharan Africa WHO (2024).

This persistence reflects the structural limitations of current

strategies, particularly in contexts marked by poverty, rapid urbanization, weak health systems, and the complexity of social determinants of health. Global malaria control strategies, mainly based on Insecticide-Treated Nets (ITNs), Indoor Residual Spraying (IRS), rapid diagnosis, and Artemisinin-based Combination Therapy (ACT), have demonstrated variable effectiveness depending on the context Bhatt, et al., (2015); WHO (2023). However, several authors emphasize that the real impact of these interventions strongly depends on local dynamics, population behaviors, and governance mechanisms Tusting, et al., (2019); Durnez & Coosemans (2021).



Malaria in the Democratic Republic of Congo

The DRC is among the countries most affected by malaria globally. It accounts for approximately 12% of the global malaria burden WHO (2024). Malaria is the leading cause of consultation, hospitalization, and mortality among children under five, and a major socio-economic vulnerability factor for households PNLP (2023). Despite the existence of the National Malaria Control Program (NMCP) and support from partners such as the Global Fund, UNICEF, and WHO, epidemiological indicators remain concerning. Several evaluations have highlighted weaknesses in program implementation, particularly in coordination, community ownership, and sustainability Kazadi, et al., (2021); USAID (2022) [1].

Specificities of the Urban Context in Kinshasa and Masina District

Contrary to the long-held belief that malaria is primarily a rural disease, recent studies show a resurgence of malaria in African urban areas, linked to uncontrolled urbanization, the proliferation of breeding sites, and socio-spatial inequalities Robert, et al., (2018); Keiser, et al., (2020). The Masina health district, located in eastern Kinshasa, is characterized by high population density, unplanned urbanization, chronic sanitation problems, and unequal access to health services. These factors create an environment conducive to malaria transmission while complicating intervention implementation.

Problem Statement

Despite numerous antimalarial interventions in Masina, morbidity indicators remain high. This raises a central question: why do malaria prevention and control programs fail to achieve expected results in Masina? Beyond technical and financial constraints, several studies suggest that actors' logics-understood as systems of rationalities, interests, representations, and strategies specific to each actor play a decisive role in the success or failure of health policies Crozier & Friedberg (2014); Olivier de Sardan (2021).

Scientific and Social Justification of the Study

Analyzing actors' logics allows moving beyond a strictly biomedical interpretation of malaria, integrating social, institutional, and political dimensions. In Masina, where state actors, international partners, NGOs, health providers, community leaders, and local populations coexist, understanding interactions is essential to improve program effectiveness. Scientifically, this study contributes to literature on health program governance in African urban contexts. Operationally, it provides elements for adapting malaria control strategies to local realities [2].

Study Objectives

General Objective: To analyze the influence of actors' logics on the implementation and effectiveness of malaria prevention and

control programs in Masina health district in Kinshasa.

Specific Objectives:

- a) Identify the main actors involved in malaria control in Masina
- b) Analyze their logics, interests, and strategies
- c) Examine the impact of these logics on intervention performance
- d) Propose improvement pathways based on better governance

Research Hypotheses

- a) Divergences in logics among institutional actors, technical partners, and local communities limit program effectiveness.
- b) Insufficient consideration of community rationalities reduces intervention ownership.
- c) Improved coordination and integration of actors would sustainably improve program outcomes [3].

Literature Review and Theoretical Framework

Literature Review

Malaria in Urban Areas: A Growing Reality: For a long time, malaria was perceived as mainly rural. However, recent research shows that rapid urbanization, city expansion, and peri-urban precariousness have led to significant urban malaria transmission Robert, et al., (2018). In Kinshasa, studies indicate that uncontrolled urbanization creates conditions favorable for mosquito proliferation, including stagnant water accumulation, insufficient sanitation infrastructure, and dense housing M Buyamba-Kabangu, et al., (2021). Urbanization also influences prevention behaviors. Urban populations may theoretically have access to health services, but economic constraints, beliefs, and mobility limit effective use of interventions Adebayo, et al., (2020). Thus, the simple distribution of nets or drugs is insufficient to significantly reduce disease burden.

Prevention and Control Programs: Successes, Limits, and Challenges: Malaria control programs rely on standardized interventions: ITN distribution, rapid case management, IRS, epidemiological surveillance, and health education campaigns WHO (2023). These strategies have been effective in several African countries, especially with stable financing and good governance.

However, their Effectiveness is Often Limited by:

- a) Insecticide resistance Ranson, et al., (2021)
- b) Parasite resistance to antimalarials White, et al., (2022)
- c) Insufficient real coverage
- d) Logistical difficulties (stock, transport, distribution)

- e) Low community ownership Hill, et al., (2020)

Recent literature emphasizes integrating technical interventions into a global approach that includes social, economic, and political determinants Tusting, et al., (2019).

Governance and Coordination of Actors: A Determinant Factor: Program governance is defined as the set of decision-making processes, coordination mechanisms, and interactions between actors guiding policy implementation Siddiqi, et al., (2009). In malaria control, many studies show fragmented governance with multiple actors having sometimes divergent objectives Buse & Walt (2000).

In Kinshasa, Intervention Architecture Involves:

- a) The State (NMCP, Ministry of Health)
- b) Provincial and local authorities
- c) National and international NGOs
- d) Technical and financial partners (Global Fund, USAID, WHO)
- e) Health facilities (hospitals, health centers, pharmacies)
- f) Communities and local leaders

This multiplicity creates complex interactions where power relations, financial interests, and institutional logics can affect effectiveness Olivier de Sardan (2011).

Importance of Sociological Approach: Actors' Logics: The concept of actors' logics originates from social sciences and organizational analysis. It refers to rationalities, motivations, and strategies of each actor in a system Crozier & Friedberg (2014). Actors do not behave solely as policy executors; they negotiate, adapt, circumvent, and reinterpret directives based on constraints and objectives.

In Health, Policy Failures can be Linked to:

- a) Lack of coordination
- b) Competition for resources
- c) Power logics
- d) Weak community participation
- e) Informal practices (co-payment, resource diversion, favoritism)

Olivier de Sardan (2021); Ridde (2016).

Analyzing actors' logics identifies mechanisms behind observed results beyond biomedical data.

Theoretical and Conceptual Framework

Definition of Actors' Logics

Actors' logic is defined as the combination of interests, norms,

values, representations, and strategies guiding an actor's actions in a social system Crozier & Friedberg (2014). In health programs, actors are not mere executors; they negotiate and adapt policies based on constraints and objectives.

Actors' Logics can be Classified as:

- a) Institutional logics (compliance with rules and procedures)
- b) Political logics (power, influence, visibility)
- c) Economic logics (resource access, financing, profitability)
- d) Community logics (traditions, beliefs, social norms)
- e) Individual logics (personal interests, survival strategies)

Proposed Analysis Model

This study uses a model inspired by actor-structure theory and actor game analysis. It is based on three dimensions:

Structural Dimension: institutional environment, rules, resources, norms, constraints (NMCP, budgets, procedures).

Interactional Dimension: relationships between actors, collaboration networks, conflicts, alliances, coordination mechanisms.

Strategic Dimension: actors' objectives and strategies (funding, visibility, legitimacy, resource control).

Theoretical Hypothesis

Program performance depends not only on technical interventions but also on how actors' logics align. Divergences can lead to fragmentation, poor coordination, limited community ownership, and reduced effectiveness [4].

Methodology

Study Design

This study adopts a mixed-methods approach (quantitative and qualitative), descriptive and explanatory.

Mixed Methods are Particularly Relevant for Analyzing Actors' Logics because they Combine:

- a) Quantitative data (coverage, access, behaviors)
- b) Representations and logics of action (interviews, discourses, conflicts)

This approach explains quantitative results through observed social dynamics, consistent with recent public health research recommendations Creswell & Creswell (2018); Fetters, et al., (2019).

Study Setting

Geographic Setting: The study takes place in Masina health district, located in Kinshasa. Masina is characterized by high density,

unplanned urbanization, sanitation issues, and socio-economic heterogeneity, recognized as major determinants of urban malaria transmission Keiser, et al., (2020).

Institutional Setting:

Masina is Managed by Multiple Institutional Actors:

- a) NMCP
- b) Kinshasa Provincial Health Division (DPS)
- c) health structures (hospitals, health centers, private clinics)
- d) NGOs
- e) technical and financial partners
- f) community leaders and local associations

These actors participate in planning, implementation, and monitoring of antimalarial interventions [5].

Study Population

The target population includes:

- a) Institutional Actors: NMCP, DPS, district managers, program officers, partners.
- b) Health Providers: doctors, nurses, midwives, community health workers, facility managers.
- c) Community Leaders: neighborhood chiefs, cell chiefs, association leaders, religious leaders.
- d) Beneficiary Populations: households, pregnant women, parents of children under five, malaria patients.

Sampling

Quantitative Sampling

A probabilistic sampling method ensures representativeness. Sample size is calculated using Kish formula (1965) with 5% margin of error, 95% confidence level, and an estimated proportion of 50%.

Estimated sample size:

$$N = Z^2 * p (1 - p) / d^2$$

where $Z = 1.96$, $p = 0.5$, $d = 0.05$.

After adjustment for non-response and cluster design, final sample is estimated at 400 households.

Qualitative Sampling

Qualitative sampling uses purposive (theoretical) sampling to select key informants.

- a) 10-15 institutional actors
- b) 15-20 health providers
- c) 10-15 community leaders

- d) 6-8 Focus Group Discussions (FGDs) with households

Data saturation is reached when interviews provide no new information Guest, et al., (2006).

Inclusion and Exclusion Criteria

Inclusion Criteria

Quantitative:

- a) Households living in Masina for at least 6 months
- b) Household with at least one adult (≥ 18) able to respond
- c) Informed consent

Qualitative:

- a) Actors involved in malaria control
- b) Availability and consent
- c) Ability to communicate in French or Lingala

Exclusion Criteria

- a) Households living in Masina for less than 6 months
- b) Respondents unable to answer
- c) Actors not involved in malaria control
- d) Refusal of consent

Data Collection Techniques

Quantitative Data Collection:

A Structured Questionnaire is Administered to Selected Households, Including:

- a) Socio-demographic data
- b) Malaria knowledge
- c) Prevention practices (ITN use, environmental management)
- d) Access to care and consultation delays
- e) Perception of interventions (ITNs, IRS, etc.)
- f) Malaria-related expenses

Qualitative Data Collection

Semi-Structured Interviews:

Conducted with Institutional Actors, Providers, and Leaders to Explore:

- a) Responsibilities
- b) Objectives and strategies
- c) Perceptions of malaria control
- d) Constraints

e) Interactions with other actors

Focus Group Discussions (FGDs):

FGDs with Households to Collect:

- a) Representations of malaria
- b) Prevention behaviors
- c) Difficulties accessing interventions
- d) Relationships with providers

Data Collection Instruments

- a) Structured questionnaire (pre-tested)
- b) Semi-structured interview guide
- c) Focus group discussion guide
- d) Observation checklist (health facilities and ITN distribution points)
- e) INSTRUMENTS are pre-tested in a similar neighborhood to ensure clarity and cultural appropriateness.

Data Analysis

Quantitative Analysis

Data is entered in Epi Info or SPSS. Analyses include:

- a) Descriptive statistics (frequencies, means, SD)
- b) Bivariate analysis (χ^2 , t-tests)
- c) Multivariate analysis (logistic regression) to identify determinants of intervention use
- d) Results are presented in tables and graphs.

Qualitative Analysis

Interviews and FGDs are recorded (with consent), transcribed, and coded. Thematic analysis is conducted Braun & Clarke (2006).

Emerging Themes Include:

- a) Coordination of actors
- b) Competing logics
- c) Institutional constraints
- d) Community ownership
- e) Informal practices
- f) Perception of interventions

Data triangulation strengthens validity Fetters, et al., (2019).

Validity, Reliability, and Scientific Rigor

Rigor is Ensured through:

- a) Pre-testing instruments
- b) Training of data collectors

c) Double data entry

d) Triangulation of sources

e) Theme validation by a review committee

f) Transparency in method description

6.10. Ethical Considerations

6.10.1. The Study Respects:

- a) informed consent
- b) anonymity and confidentiality
- c) privacy
- d) right to withdraw
- e) approval by an ethics committee

Results, Discussion, Conclusion and Bibliography

Results

Socio-Demographic Characteristics of Households:

Among 400 Surveyed Households:

- a) Mean age of respondent: 37.2 years (± 11.8)
- b) Gender: 64% women, 36% men

Education Level:

- a) No education: 22%
- b) Primary: 36%
- c) Secondary: 30%
- d) University: 12%

Employment Status:

- a) Informal (traders, artisans): 58%
- b) Salaried: 22%
- c) Unemployed: 20%

These data show a predominantly female population with low education, influencing prevention practices and access to services [6].

Knowledge and Prevention Practices

Malaria Knowledge

- a) 82% correctly identify mosquito transmission.
- b) 64% believe malaria can be caused by stagnant water, dust, or bad smells (misconceptions).
- c) 48% know that bed nets are effective prevention.

Prevention Practices

- a) 54% regularly use ITNs.

- b) 31% follow correct washing procedures.
- c) 18% treat breeding sites.
- d) 58% consult a health facility within 24 hours of fever.

These results show partial adoption of interventions and low environmental management [7].

Access to Services and Barriers

Main Obstacles Reported:

- a) Cost of care (42%)
- b) Drug stockouts (28%)
- c) Distance/transport (16%)
- d) Lack of trust in facilities (14%)

Observed Actors' Logics (Qualitative Results)

Institutional Logics

Institutional Actors Focus on:

- a) Campaign planning
- b) Resource allocation
- c) Reporting and indicators
- d) Compliance with donor requirements

Technical Partners' Logics

Partners Prioritize:

- a) Coverage indicators
- b) Rapid results
- c) Visibility (reports, publications)
- d) Compliance with international standards

This may lead to short-term campaigns rather than sustained services.

Health Providers' Logics

Providers Report:

- a) Workload overload
- b) Difficult working conditions
- c) Performance pressure
- d) Pursuit of additional income (drug sales, co-payment)

These generate informal practices affecting access and quality.

Community Logics

Communities Show:

- a) Mixed biomedical and traditional representations

- b) Strong influence of religious and traditional leaders
- c) Priority given to immediate expenses (food, transport)
- d) Low trust in public services

FGDs reveal some families prefer traditional healers or market drugs rather than health facilities [8].

Interactions Between Logics: Convergence and Conflicts

Results Show Convergence on the Overall Goal (malaria reduction), but Divergence on:

- a) Priorities (coverage vs quality)
- b) Means (campaigns vs permanent services)
- c) Governance (centralization vs community participation)
- d) Resources (budget, logistics, motivation)

These divergences create tensions and fragmentation, limiting program effectiveness.

8. Discussion

Malaria Persistence Despite Interventions: A Matter of Actors' Logics: The results show that malaria persistence in Masina is not only technical but mainly social and institutional. Performance logic based on indicators, supported by institutions and donors, focuses on numbers rather than quality and sustainability. This aligns with Ridde (2016) and Olivier de Sardan (2021), who argue that health policies often fail due to divergence between actors' logics and local realities [9].

Insufficient Community Ownership: Data show limited ownership of prevention measures. Despite high knowledge, practices remain insufficient (partial ITN use, low sanitation). This matches Adebayo, et al., (2020) and Hill, et al., (2020), showing technical interventions alone cannot change behaviors without real community mobilization [10].

Governance and Coordination Challenges: Multiple actors create complex governance. Results show insufficient coordination with fragmented actions and contradictory objectives, consistent with Buse & Walt (2000) and Siddiqi, et al., (2009).

Informal Practices and Quality of Care: Informal practices among providers (co-payment, drug sales, diversion) significantly affect access. These practices reflect economic survival logic in low-pay contexts and performance pressure, consistent with Olivier de Sardan (2011).

Conclusion

This study shows that program performance in Masina is strongly influenced by actors' logics. Divergences between institutional, donor, provider, and community logics lead to fragmentation and limited ownership. To improve program effectiveness, it is essential to strengthen coordination, integrate communities in governance, and establish appropriate motivation and control mechanisms.

Recommendations

Strengthen Governance and Coordination

- a) Establish a local coordination platform involving all actors (NMCP, DPS, NGOs, community leaders)
- b) Harmonize interventions to avoid duplication and inconsistencies.

Conflict of Interest

None.

Acknowledgment

None.

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