

Pain, policy, and the opioid dilemma in sub-Saharan Africa: a systematic review of access, regulation, and health governance from 1990 to 2024

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Abstract

Sub-Saharan Africa (SSA) faces a dual opioid dilemma: widespread undertreatment of moderate to severe pain due to limited access to essential opioid analgesics, alongside increasing concern about misuse and diversion in selected contexts. Opioids are clinically indicated for severe cancer-related pain, advanced chronic illness, major trauma, surgery, and end-of-life care; yet, regional consumption remains disproportionately low relative to documented disease burden, indicating systemic under-provision rather than low need. This systematic review synthesizes evidence on opioid policy, regulation, access, and governance in SSA to examine how legal frameworks, institutional arrangements, political dynamics, and data systems shape medical availability. Following PRISMA and SWiM guidance, we reviewed peer-reviewed and gray literature addressing national drug control laws, regulatory implementation, procurement and supply systems, prescribing authority, and surveillance capacity; 33 studies met inclusion criteria. Across settings, restrictive or ambiguously interpreted legislation, multi-layered administrative controls, fragmented mandates across health and enforcement institutions, weak forecasting and distribution systems, concentrated prescribing authority, professional risk aversion, and chronic data gaps were consistently associated with constrained access. Concurrently, rising political and media attention to non-medical use, particularly of tramadol, has reinforced enforcement-oriented narratives that may further limit reform space. Persistent deficiencies in routine consumption data and unmet need assessment contribute to conservative import quotas and regulatory inertia. Addressing this imbalance requires proportionate, sequenced reform that strengthens data and forecasting systems, clarifies and aligns legal mandates with public health objectives, invests in workforce capacity and supply chains, and embeds safeguards against diversion while correcting avoidable under-treatment.

Keywords opioid policy, pain management, sub-Saharan Africa, health governance, healthcare access barriers, opioid diversion, harm reduction, opioidphobia

Key messages

- Sub-Saharan Africa faces a structural imbalance in opioid governance: persistently low access to essential pain medicines despite substantial clinical need, within regulatory systems that emphasize control over medical availability.
- Restrictive or ambiguously interpreted drug laws, fragmented institutional mandates, weak procurement and supply chains, and limited prescriber authority collectively constrain equitable access, even where opioids are legally permitted.

- Security-oriented political narratives and rising concerns about non-medical use, particularly of tramadol, risk entrenching regulatory conservatism unless clearly differentiated from policies governing medical pain management.
- Proportionate reform is feasible: aligning drug control with public health objectives, strengthening data and forecasting systems, investing in workforce training and supply infrastructure, and embedding safeguards can expand access while mitigating misuse.

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Introduction

Opioids are a class of psychoactive substances with both medical and non-medical uses. In clinical settings, opioids are indispensable for the management of moderate to severe pain and are central to cancer care, palliative care, major surgery, and advanced chronic disease management (Paul et al. 2021, Paice et al. 2023). At the same time, their pharmacological properties create risks of tolerance, dependence, and misuse, which justify their classification as controlled medicines under national and international drug control frameworks (Kerrigan and Goldberger 2020, Lefkof et al. 2022). This dual role, as both an essential medicine and a subject to exceptional control, places opioids at the intersection of health systems, law, and politics.

Globally, opioid policy and regulation have been strongly shaped by experiences in high-income countries, particularly the escalation of non-medical opioid use and overdose mortality in North America (Kim et al. 2017, McDonald et al. 2024). These experiences have reinforced policy narratives centered on risk containment, surveillance, and enforcement (Kurth et al. 2018). When such narratives are applied to low- and middle-income settings without adaptation, they can produce unintended consequences. In sub-Saharan Africa, where patterns of opioid use differ substantially, risk-averse regulatory approaches have contributed to persistently low availability of opioids for legitimate medical purposes (Berterame et al. 2016, Roques et al. 2022).

Low levels of medical opioid consumption in sub-Saharan Africa do not reflect low clinical need. The region carries a substantial and growing burden of cancer, trauma, HIV-related conditions, and advanced non-communicable diseases, many of which are associated with moderate to severe pain requiring opioid analgesia (Knaul et al. 2018, Namisango et al. 2018, Moyo-Chilufya et al. 2023). Persistently low consumption, therefore, signals unmet need rather than appropriate restraint. Explaining this gap requires attention not only to clinical capacity and pharmaceutical supply, but also to the legal, institutional, and political contexts in which opioid policy is formulated and implemented.

Evidence from across sub-Saharan Africa points to a recurring set of governance-related barriers to medical opioid access. These include restrictive or outdated drug control laws, narrow interpretations of international conventions, fragmented regulatory mandates, weak procurement and distribution systems, and the concentration of prescribing authority among a limited group of clinicians (Cleary et al. 2013b, Ndomondo-Sigonda et al. 2017, Ooms et al. 2023). These structural constraints are reinforced by sociocultural factors, including stigma, fear of dependence, and professional risk aversion, commonly described as opiophobia, which discourage appropriate prescribing even where opioids are legally permitted and clinically indicated (Garett and Young 2022, Harsanyi et al. 2023). At the same time, several countries in the region have reported rising non-medical use of certain pharmaceutical opioids, particularly tramadol and codeine, alongside increased political and media attention to trafficking and youth substance use (Alhassan 2022, Emmanuel et al. 2024). These developments matter for medical access because they shape regulatory posture and political discourse. Concerns about misuse, even when epidemiological evidence is limited or localized, can reinforce enforcement-oriented approaches and constrain reforms intended to expand access to

opioids for pain management. As a result, medical and non-medical opioid issues become politically entangled despite requiring distinct policy responses.

A growing body of research has examined aspects of opioid access in sub-Saharan Africa, including formulary availability (Cherny et al. 2013), procurement systems (Zandibeni et al. 2022), palliative care coverage (Luyirika et al. 2022, Nakkazi 2025), and patterns of substance use (Oluwafunmilayo et al. 2022, Emmanuel et al. 2024). While these studies have generated important insights, the evidence base remains fragmented. Existing reviews typically focus on clinical, epidemiological, or supply-side dimensions in isolation and rarely examine how political priorities, governance arrangements, regulatory interpretations, and data systems interact to shape opioid availability. As a result, policy recommendations are often technically sound but insufficiently grounded in the political and institutional realities that determine implementation.

This review addresses that gap by synthesizing evidence on opioid policy, regulation, access, and governance in sub-Saharan Africa through a health systems and political economy lens. Patterns of opioid availability are interpreted in relation to documented clinical need, health system capacity, and governance context rather than treated as *a priori* indicators of appropriate use. Where evidence is limited or heterogeneous, uncertainty is made explicit, and priorities for improved measurement and evaluation are identified. The review integrates findings from peer-reviewed research, policy analyses, and gray literature to clarify how legal frameworks, institutional arrangements, sociopolitical narratives, and data limitations collectively shape opioid access.

The objectives of this review are to:

1. Synthesize evidence on national legal and regulatory frameworks governing medical opioids in sub-Saharan Africa.
2. Identify structural, institutional, and sociocultural barriers to accessing opioids for legitimate medical purposes.
3. Examine how political discourse and concerns about non-medical opioid use influence regulatory implementation and reform.
4. Derive policy-relevant insights to inform proportionate, evidence-informed governance reforms that balance medical access with appropriate safeguards.

Materials and methods

Study design and protocol registration

This study is a systematic review with thematic synthesis, conducted to examine opioid policy, regulation, access, and governance in sub-Saharan Africa. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) reporting guidelines (Page et al. 2021). A protocol specifying the review objectives, eligibility criteria, and analytic approach was prospectively registered with PROSPERO (registration number: CRD42025637149). Given the heterogeneity of study designs and outcomes, and the focus on governance and policy processes rather than intervention effects, meta-analysis was neither appropriate nor attempted. Instead, a structured narrative and thematic synthesis approach was adopted.

Table 1 Search strategy and information sources.

Database/source	Search fields	Core search terms per database
Academic databases		
PubMed	Title/Abstract, MeSH	('Opioid Analgesics'[MeSH] OR opioids OR narcotics) AND ('Pain Management'[MeSH] OR palliative care OR cancer pain) AND ('Health Policy'[MeSH] OR drug control OR regulation OR governance OR access) AND ('Africa'[MeSH] OR 'Sub-Saharan Africa')
JSTOR	Title, Abstract	opioids AND (policy OR regulation OR governance OR access) AND Africa
Elsevier (ScienceDirect)	Title, Abstract, Keywords	opioids AND health policy AND Africa; palliative care AND opioids AND regulation
SAGE Journals	Title, Abstract	opioids AND (drug policy OR governance OR access) AND Africa
Taylor & Francis Online	Title, Abstract	opioids AND (regulation OR policy OR governance) AND 'sub-Saharan Africa'
African Journals Online (AJOL)	All fields	opioids AND pain management; opioids AND drug policy
Other sources		
Google Scholar	All fields	opioids policy Africa; opioid access sub-Saharan Africa
Institutional websites (WHO, INCB, UNODC, Ministries of Health)	Reports, policy documents	opioid policy; controlled medicines; pain management Africa

MeSH, Medical Subject Headings; WHO, World Health Organization; INCB, International Narcotics Control Board; UNODC, United Nations Office on Drugs and Crime.

Eligibility criteria

Eligibility criteria were defined *a priori* using a modified Population, Intervention or Exposure, Context, and Outcome (PICO) framework, adapted for policy and governance research.

Population

Studies were eligible if they focused on opioid policy, regulation, governance, access, or implementation within one or more countries in sub-Saharan Africa. Studies addressing regional or global frameworks were included if they contained substantive analysis relevant to sub-Saharan African settings.

Intervention or exposure

Eligible studies examined laws, regulations, policies, institutional arrangements, or health system processes related to the medical use of opioids. Studies addressing non-medical opioid use were included where they analyzed implications for policy, regulation, or governance affecting medical access.

Outcomes of interest

Primary outcomes included reported barriers and facilitators to opioid availability for legitimate medical purposes, regulatory and governance mechanisms, institutional roles, political and sociocultural influences, and limitations in data and surveillance systems relevant to policy decision-making.

Study types

Peer-reviewed empirical studies, policy analyses, legal reviews, and relevant gray literature were eligible. Qualitative, quantitative, and mixed-methods designs were included. Editorials, opinion pieces, and purely descriptive biomedical or pharmacological studies without policy or governance analysis were excluded.

Timeframe and language

No restrictions were placed on publication dates. Only English-language sources were included due to resource constraints.

Information sources and search strategy

A structured and reproducible search strategy was implemented to capture both peer-reviewed and policy-relevant literature. Systematic searches were conducted in PubMed, JSTOR, ScienceDirect, SAGE Journals, Taylor & Francis Online, and African Journals Online, ensuring broad disciplinary scope and adequate representation of regionally indexed research. Searches were conducted from database inception to the final search date. Search terms combined controlled vocabulary and free-text keywords related to opioids, pain management, policy, regulation, governance, and sub-Saharan Africa. Boolean operators were used to tailor strategies to each database. The full search strategies are reported in [Table 1](#).

To capture policy-relevant evidence not indexed in academic databases, targeted searches of institutional websites were conducted, including those of the World Health Organization, the International Narcotics Control Board, the United Nations Office on Drugs and Crime, and national ministries of health. Google Scholar was used in a supplementary capacity to identify additional reports and studies, with screening limited to the first 200 results per search string to enhance reproducibility.

Study selection and data extraction

All identified records were imported into Rayyan, a web-based systematic review screening tool, for deduplication and screening ([Ouzzani et al. 2016](#)). Two reviewers (S.N. and J.C.M.) independently screened titles and abstracts. Full texts of

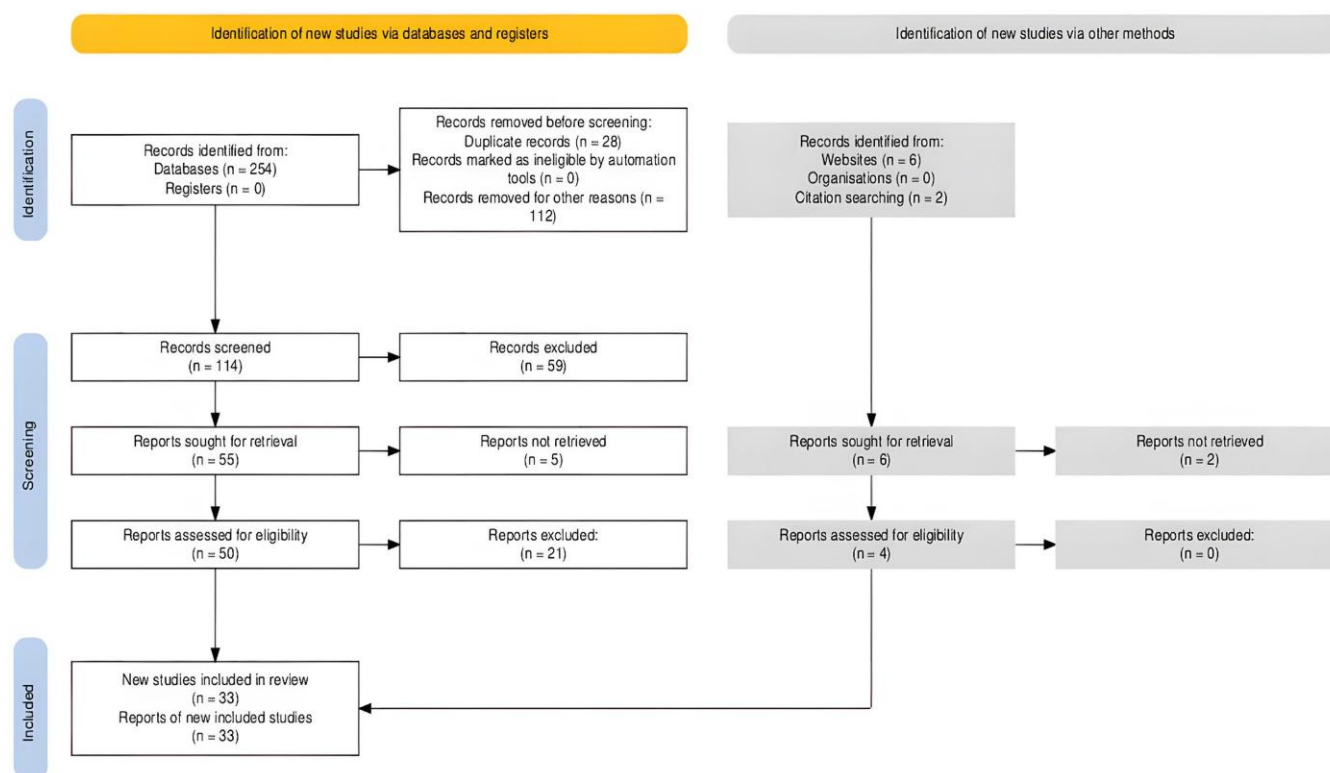


Figure 1 PRISMA flowchart illustrating identification, screening, eligibility, and inclusion of the studies.

potentially eligible studies were retrieved and assessed against the inclusion criteria. Data extraction was conducted in parallel with full-text screening using a standardized extraction form developed in advance. Extracted variables included author, year, country or region, study design, data sources, policy focus, and key findings related to opioid regulation, access, governance, and political context. Disagreements at any stage of screening or extraction were resolved through discussion and, where necessary, consultation with a third reviewer (R.A.A). The study selection process is summarized in a PRISMA flow diagram (see Fig. 1). The PRISMA flow diagram was generated using the PRISMA 2020 ShinyApp. Data extracted from the review process were first compiled in Microsoft Excel and then imported into the PRISMA 2020 ShinyApp to automatically produce the flow diagram in accordance with PRISMA 2020 reporting standards (Haddaway et al. 2022).

Data synthesis and thematic analysis

Data were synthesized using a thematic approach guided by the Synthesis Without Meta-analysis framework (SWiM) (Campbell et al. 2020). An initial analytical framework was informed by the World Health Organization's principles on balancing access to controlled medicines with prevention of diversion, alongside established literature on pharmaceutical governance and political economy. Coding combined deductive categories derived from this framework with inductive codes emerging from the data. All included studies were read in full and independently coded by two reviewers (S.N and J.C.M). Codes were iteratively refined and grouped into higher-order themes through team

discussion. Themes were synthesized narratively to identify recurring patterns, contextual variation, and cross-cutting governance mechanisms influencing opioid access.

Quality appraisal and risk of bias

Methodological quality and risk of bias were assessed using tools appropriate to the study design. Peer-reviewed empirical studies were appraised using the Newcastle-Ottawa Scale for non-randomized studies (Sampson 2006), while gray literature was assessed using the AACODS checklist (Tyndall 2010). Results of the quality appraisal are summarized in Supplementary Tables S1 and S2. Quality appraisal was conducted to support the interpretation of findings rather than to exclude studies or to quantitatively weight results, given the review's focus on policy processes and governance mechanisms.

Results

Overview of included studies

This systematic review included 33 studies that met the eligibility criteria, comprising a diverse array of peer-reviewed articles, governmental documents, technical reports, and gray literature. The selected studies examined the regulation, access, governance, and political discourse surrounding opioid use in African countries. Geographically, the studies were distributed across the continent, including Nigeria, Kenya, Uganda, South Africa, Ghana, Tanzania, Malawi, and Rwanda. The documents varied

in methodology, including qualitative studies ($n = 18$), mixed-methods studies ($n = 5$), policy analyses ($n = 6$), and program reports ($n = 4$). [Table 2](#) summarizes the characteristics of included studies. The geographical distribution of studies is presented in [Fig. 2](#). Most included studies focused on national-level policy frameworks, regulatory processes, and health system barriers to opioid access. Fewer studies examined subnational variation, implementation practices, or longitudinal change over time. Evidence on opioid consumption and availability relied heavily on international datasets, particularly reports from the International Narcotics Control Board and the World Health Organization, with limited routine national data reported in many countries.

Thematic synthesis of findings

The findings identified five major themes that shape the politics of opioids in Africa in terms of policies, access, and governance. The thematic synthesis identified five major themes shaping the politics of opioids in Africa: policy and regulatory frameworks; barriers to access; governance and institutional roles; political influence; and evidence and data gaps. Each theme is discussed in detail below. [Table 3](#) outlines the themes, their implications, and the codes used to generate them. Throughout this review, limited opioid access is interpreted in relation to documented health needs and palliative care demand, rather than as a simple comparison of consumption levels across regions.

Policy and regulatory frameworks

A dominant theme throughout the literature is the presence of outdated, fragmented, and often highly restrictive policy frameworks that control opioid availability and use. Many SSA countries still operate under laws inherited from colonial drug control systems or heavily influenced by international narcotics conventions that prioritize prohibition over access. In several cases, national policies reflect a narrow interpretation of global drug control treaties, emphasizing the criminalization of substances without corresponding efforts to promote their medical use for pain management and palliative care.

Countries such as Kenya and South Africa have made relatively greater progress in revising national drug and health policies to better align with global public health standards, including the integration of opioids into essential medicines lists and the incorporation of pain management within national cancer and palliative care strategies. Progress elsewhere has been more uneven. Tanzania has sustained methadone maintenance therapy through national opioid treatment programs since 2011, and recent implementation research continues to document methadone clinic operations and service delivery challenges; however, broader policy reforms to improve access to opioid analgesics for pain management and to decentralize opioid agonist therapy beyond specialized clinics remain limited in the current literature through 2025 ([Nkya et al. 2026](#)). In Nigeria and several other settings, opioid policy is characterized by legal ambiguity, overlapping regulatory mandates, and highly restrictive administrative controls, which have created uncertainty among prescribers and regulators regarding the permissible scope of opioid procurement, prescribing, and distribution. In many of the reviewed

studies, national opioid policies did not align with the World Health Organization's guidelines on balancing drug control with medical availability, especially as outlined in the 'Ensuring Balance in National Policies on Controlled Substances' framework ([INCB 2021](#)).

Barriers to medical or non-medical access

Structural and systemic barriers to opioid access have become a key concern. Several studies highlight the difficulties involved in obtaining, prescribing, and distributing opioids for legitimate medical purposes, especially in palliative care settings ([Bronkhorst et al. 2021](#)). A common issue identified is the complexity of regulatory procedures, which often require multiple levels of bureaucratic approval for procurement, storage, and prescribing. In countries like Ethiopia and Nigeria, health professionals must navigate numerous layers of authorization, which can significantly delay or prevent the delivery of essential pain medications ([Soyannwo 2014](#)).

Limited availability of opioids at health facilities was a recurring problem, mainly due to weak pharmaceutical supply chains, poor procurement systems, and frequent stockouts. In Uganda and Malawi, for example, supply chain problems have caused ongoing shortages of oral morphine despite national efforts to expand palliative care access ([Knaul et al. 2018](#)). Another major barrier identified was the restriction of prescribing rights to a limited group of healthcare providers, usually specialist physicians.

Furthermore, stigma and misinformation about opioids were widely reported. Many healthcare workers feared professional sanctions or public backlash for prescribing opioids, especially due to concerns about addiction or legal issues. This creates a widespread culture of "opiophobia" that discourages proper prescribing even when it is legally permitted ([Elmore et al. 2019](#), [Roques et al. 2022](#), [Ooms et al. 2023](#)).

Governance and institutional roles

Governance-related challenges significantly affect the implementation of opioid policy. While some countries have established national opioid control frameworks or assigned agencies for oversight, most settings face fragmented mandates and poor coordination among regulatory bodies. For example, in Nigeria, responsibilities for regulating opioids are shared among several institutions, including the National Agency for Food and Drug Administration and Control (NAFDAC), the Federal Ministry of Health, and the Pharmacy Council of Nigeria. This institutional overlap contributes to delays, inefficiencies, and a lack of accountability ([Cleary et al. 2013c](#), [Berterame et al. 2016](#), [Ndomondo-Sigonda et al. 2017](#)).

Even when governance structures are in place, they often lack sufficient funding, technical expertise, and human resources to regulate and monitor effectively. Countries with decentralized health systems face extra challenges, as state or provincial governments may interpret national policies differently or fail to prioritize opioid access at the local level. Additionally, mechanisms for monitoring opioid consumption and prescription practices are either absent or poorly developed in much of the reviewed literature ([Richards et al. 2021](#)). This governance gap not only hampers implementation but also weakens transparency and trust in regulatory institutions.

Table 2 Characteristics of included studies on opioid policy, access, and governance in sub-Saharan Africa.

Domain (source)	Country/ region	Study design	Policy/focus area	Primary issues identified
Access and consumption				
(Berterame et al. 2016)	Multiple (Global/SSA)	Cross-sectional analysis	Opioid consumption, access	Africa has the lowest global opioid consumption
(Richards et al. 2021)	Multiple (Global/SSA)	Cross-sectional analysis	Opioid consumption	Africa lowest consumption; significant data gaps
(Yenet et al. 2023)	Multiple SSA countries	Scoping review	Essential medicines, affordability	Financial barriers, procurement challenges
(Domie et al. 2023)	Ghana	Case study	Medicines procurement	Delays, inefficiencies, regulatory overlap
Regulatory and policy barriers				
(Cleary et al. 2013a, 2013b, 2013c)	Multiple SSA countries	Policy analysis/Survey	Regulatory barriers, formulary access	Restrictive policies, low opioid availability
(Kamwanja et al. 2011)	ECOWAS (West Africa)	Situation analysis	Medicines registration, harmonization	Regulatory bottlenecks, multi-agency issues
(Ndomondo-Sigonda et al. 2017)	Multiple SSA countries	Policy review	Medicines regulation	Fragmented authorities, slow processes
(Otu et al. 2023)	Nigeria	Policy analysis	Regulatory policy, political economy	Overly punitive policies, access barriers
(Scheibe et al. 2020)	South Africa	Policy analysis	Drug policy, prohibition effects	Prohibition limits access; harm reduction needed
(Roques et al. 2022)	Multiple SSA countries	Perspective/Policy review	Opioid crisis, access	Under-treatment, policy inertia
Palliative care and health systems				
(Downing et al. 2016)	South Africa, Kenya	Case study/Policy review	Palliative care integration	Policy progress, documented best practices
(Knaul et al. 2018)	Uganda, Kenya	Case study	Palliative care programs	Uganda as a model; system-level lessons
(Fraser et al. 2018)	Uganda, Kenya	Case study	Program development, access	Uganda as a model; lessons for scaling
(Sibomana et al. 2019)	Multiple SSA countries	Policy commentary	Palliative care rights, access	Advocacy impacts, legal frameworks
(African Palliative Care Association 2015)	Multiple SSA countries	Policy review	Opioid estimation, supply chain	Fragmented procurement, inconsistent supply
Misuse, epidemiology, and public perception				
(Alhassan 2022)	Ghana	Qualitative study	Tramadol misuse, public perception	Stigma, media framing, youth misuse
(Addie & Lee 2024)	Nigeria	Qualitative framing analysis	Media coverage, opioid abuse	Sensationalism, limited policy dialogue
(Onohuean & Oosthuizen 2025)	Multiple SSA countries	Scoping review	Illicit opioid use, epidemiology	Data gaps, rising misuse patterns
(Emmanuel et al. 2024)	West Africa	Systematic review/meta-analysis	Substance use prevalence	Opioid misuse patterns, data limitations
(Jatau et al. 2021)	Nigeria	Scoping review	Drug abuse, laws	Enforcement gaps, limited treatment access
(Kurth et al. 2018)	Multiple SSA countries	Policy commentary	Opioid epidemic, health impact	Emerging crisis; surveillance needed
(Kwasi Elliason 2018)	Ghana	Mixed-methods	Tramadol misuse, youth	Social and economic drivers

(continued)

Table 2 Continued

Domain (source)	Country/ region	Study design	Policy/focus area	Primary issues identified
Health workforce and practice				
(Reali et al. 2021)	South Africa	Systematic review	Pharmacy practice, barriers	Training gaps, resource constraints
(Bronkhorst et al. 2021)	South Africa	Survey/qualitative	Clinical pharmacy, perceptions	Underutilization, policy barriers
Cross-cutting and emerging issues				
(Ooms et al. 2023)	Multiple SSA countries	Scoping review	Access barriers, essential medicines	Regulatory, supply chain, training gaps
(Yao et al. 2023)	Multiple SSA countries	Scoping review protocol	Opioid analgesics, availability	Protocol for mapping access
(Rosa et al. 2025)	Multiple SSA countries	Perspective	Opioid access, balance	Policy recommendations; rights-based approach
(Yamey et al. 2019)	Multiple SSA countries	Policy analysis	Health system strengthening	Donor transitions, sustainability
(Kamguia et al. 2022)	Multiple SSA countries	Policy analysis	Donor impact, policy choices	Aid shapes regulatory priorities
(Jalali et al. 2020)	Multiple SSA countries	Policy analysis	Opioid crisis, context	Contextual drivers; need for local adaptation

ECOWAS, Economic Community of West African States; SSA, sub-Saharan Africa; WHO, World Health Organization.

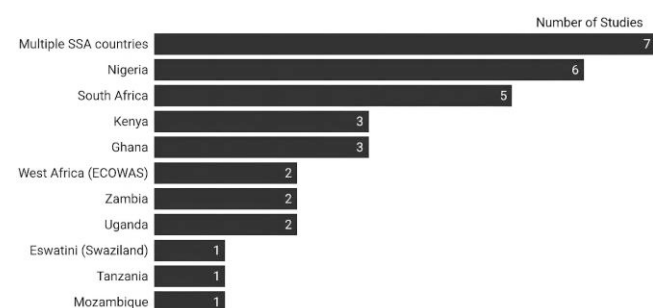


Figure 2 Geographical distribution of studies included in the review.

Political influence on opioid policy

The review found that political ideology and framing significantly influence national opioid policies. Several studies indicate that opioid regulation is frequently viewed through a security and enforcement lens rather than from a public health or human rights perspective. In countries like Uganda and Botswana, political leaders have expressed concerns that increased access to opioids could lead to misuse, addiction, or international criticism, echoing narratives linked to the North American opioid crisis. These concerns sometimes result in policy inertia or resistance to reform, even when there is no empirical evidence of widespread misuse in these contexts (Downing et al. 2015, Volkow and Blanco 2021, Kamguia et al. 2022).

Conversely, when political will and leadership aligned with public health goals, notable progress was seen. In Rwanda, for instance, political support for palliative care as a national priority resulted in investments in training, local morphine production,

and the integration of pain management into routine care. Kenya has also demonstrated its political commitment through its National Cancer Control Strategy, which includes provisions for opioid availability and prescriber training (Downing et al. 2015, Fraser et al. 2018). These examples underscore the pivotal role of political discourse and advocacy in determining whether opioid policy advances or stagnates.

Evidence and data gaps

The study revealed that most SSA countries lacked up-to-date data on opioid consumption, prescription patterns, unmet need for palliative care, or the prevalence of misuse (Ooms et al. 2023, Rosa et al. 2025). In some cases, available data were fragmented, originating from donor-funded programs or academic studies, and not routinely integrated into national health information systems (Yamey et al. 2019). This data gap hinders strategic planning and makes it challenging to assess the impact of policy interventions or identify priority populations. Only a few countries, including South Africa and Kenya, regularly report data to international agencies such as the International Narcotics Control Board (International Narcotics Control Board 2023).

Even in these contexts, surveillance systems remain limited in scope and may fail to detect regional disparities or access issues among marginalized populations. The widespread lack of high-quality data also fosters misconceptions about opioid misuse, resulting in policies that are more reactive than evidence-based (Onohuean & Oosthuizen 2025). Figure 3 shows the availability and completeness of opioid consumption reporting across African countries. Countries are categorized as having full,

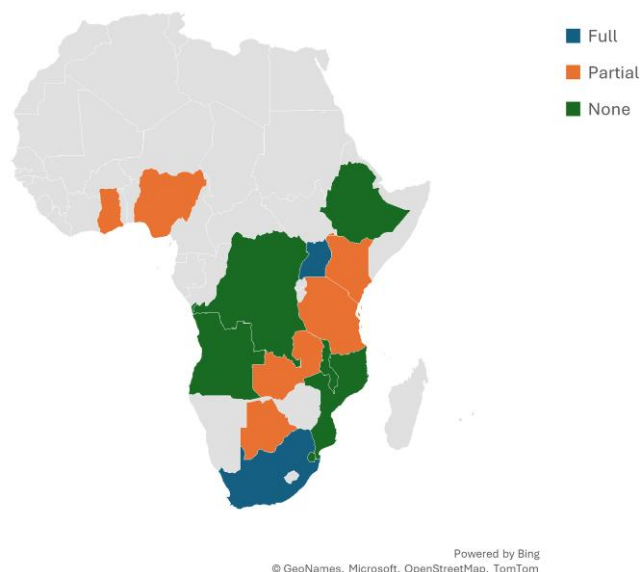
Table 3 Thematic framework derived from included studies.

Theme ^a	Definition ^b	Codes ^c
Policy and regulatory frameworks	National and international legal and policy structures governing opioid control, availability, and use	Drug laws, essential medicines lists, international conventions, licensing requirements
Barriers to access	Structural, legal, and sociocultural factors limiting medical opioid availability and use	Opiophobia, restrictive prescribing, stockouts, bureaucratic delays
Governance and institutional roles	Roles and interactions of state and non-state actors involved in opioid regulation and implementation	Regulatory fragmentation, inter-agency coordination, enforcement practices
Political influence	Effects of political priorities, ideologies, and external pressures on opioid policy	Political will, donor influence, security framing, advocacy
Evidence and data gaps	Limitations in data availability and quality affecting policy and planning	Consumption data gaps, weak surveillance, unmet need

^aOverarching themes identified through thematic analysis of included studies.

^bOperational definitions developed during coding framework development.

^cSpecific codes and sub-themes grouped under each overarching theme.

**Figure 3** Opioid consumption reporting coverage in Sub-Saharan Africa.

partial, or no reporting coverage based on data submitted to the International Narcotics Control Board (INCB) and information drawn from key literature (Berterame et al. 2016, Knaul et al. 2018, International Narcotics Control Board 2023, Ooms et al. 2023).

Discussion

Although opioids are formally recognized as essential medicines, access across sub-Saharan Africa remains limited due to interacting legal, institutional, political, and sociocultural constraints. Although international instruments such as the Single Convention on Narcotic Drugs of 1961 establish a legal foundation for ensuring the availability of opioids for medical and scientific purposes (Husain et al. 2014), they simultaneously impose stringent regulatory expectations that shape how national policies are interpreted and implemented. This dual mandate

generates tension between access and control, which in many settings has been resolved through conservative regulatory interpretation (Cleary et al. 2013b, African Palliative Care Association 2015, Ali 2016). Legal and bureaucratic controls, such as mandatory licensing, standardized prescription forms, and storage requirements, are intended to prevent diversion but can also discourage clinicians from prescribing opioids even in clear clinical contexts (Scheibe et al. 2020). Consequently, access to opioids is not just a legal issue but also heavily influenced by institutional behavior and administrative culture.

While some countries have initiated reforms, these remain uneven and fragile. South Africa and Kenya, for example, have made progress in integrating palliative care and streamlining access (Downing et al. 2016), but broader replication across the continent has been limited. One reason may be the disconnection between legal frameworks and practical implementation. Policies that appear progressive on paper often fail to yield real-world improvements due to gaps in infrastructure, training, and resource allocation. Additionally, regulatory overreach has fostered broader institutional reluctance to engage with opioid prescribing. This reluctance persists despite weak monitoring capacity, as it is driven less by routine oversight than by legal ambiguity, discretionary enforcement, and the punitive framing of opioid regulation, which exposes clinicians to perceived professional and legal risk even in the absence of consistent surveillance or accountability mechanisms (Desveaux et al. 2019, Ramachandran et al. 2025). These concerns are compounded by entrenched cultural beliefs, including perceptions of opioids as inherently dangerous or morally inappropriate, even for terminal patients (Webster et al. 2020, Mitchell et al. 2022, Essien-Aleksi et al. 2023). Stigma and fear of dependence, often reinforced by media narratives and punitive regulatory framing, shape both professional decision-making and patient expectations (Orsolini et al. 2019, Addie and Lee 2024). Prior studies highlight how stigma, fear of dependence, and moralized narratives surrounding opioids can shape both clinical decision-making and patient behavior, discouraging prescribing and use even in settings where these medicines are available and clinically appropriate (Harsanyi et al. 2023). However, the studies included in this review provided limited analysis of broader cultural influences, such as preferences for non-biomedical therapies, norms

surrounding pain tolerance, or gendered expectations in help-seeking behavior. Evidence on differences in opioid use or uptake by gender was particularly sparse. These gaps suggest that socio-cultural dynamics likely interact with regulatory and health system barriers but remain underexamined in the existing evidence base.

The limited availability of opioids is also a logistical challenge. Weak procurement, forecasting, and distribution systems compound regulatory barriers and limit availability at the point of care (Cleary et al. 2013a, Berterame et al. 2016). Even where opioids are listed as essential medicines, financial barriers and limited insurance coverage further restrict access (Vranken et al. 2020, Mathewos Oridanigo et al. 2021, Yen et al. 2023, Rosa et al. 2025). These financial burdens are especially harsh for marginalized populations, reinforcing health inequities. Financial protection mechanisms, including health insurance coverage for essential medicines, also shape opioid access in sub-Saharan Africa (Yao et al. 2023). Where insurance coverage is limited or excludes prescription medicines, opioids remain unaffordable for many patients even when legally available, contributing to under-treatment despite nominal access (Atkins and Mukhida 2022).

Fragmentation of institutional responsibilities further impedes access by diffusing accountability for medical availability while concentrating authority over control and enforcement (Doua and Van Geertruyden 2014, Domie et al. 2023). Such bureaucratic silos result in policy inertia, with regulatory bottlenecks delaying access to and reform of policies (Berterame et al. 2016, Kamwanja et al. 2011), Ndomondo-Sigonda et al. 2017). Even professional councils and associations, which should be drivers of evidence-based practices, are often underfunded or politically constrained (Adefuye et al. 2021, Yao et al. 2023, Hughes et al. 2024). In contrast, civil society organizations and patient advocates, although frequently marginalized, have in some contexts demonstrated effectiveness in challenging stigma and advancing opioid policy reform, particularly in countries such as Kenya and South Africa (Sibomana et al. 2019, Pettus and De Lima 2020). However, the presence, influence, and strategic space available to civil society actors varied markedly across the included settings, shaped by differences in political openness, governance arrangements, and historical engagement with palliative care and drug policy. In many countries, limited civic space, weak institutional linkages, or enforcement-oriented policy environments constrained the ability of non-state actors to influence opioid access across the supply chain, prescribing practices, and public perceptions (Jadhari et al. 2024).

While restrictive regulatory frameworks and weak supply chains were common across settings, the relative drivers of limited opioid access varied by context: punitive public narratives and enforcement-oriented approaches were more prominent in some countries, whereas health system capacity and regulatory implementation gaps were more salient in others. Importantly, many opioid-related restrictions are embedded within criminal and penal codes rather than health legislation, making them especially resistant to reform (Caulkins et al. 2021, Satcher et al. 2024). Even where drug law reform has been pursued, such as in Ghana (Tagziria et al. 2023), changes in statutory language have not consistently translated into reduced incarceration or meaningful shifts in everyday enforcement practices. Evidence from harm reduction programs suggests that targeted police

training and sensitization, alongside health workforce training, can play a critical role in improving access, reducing harmful enforcement, and supporting public health-oriented opioid policy (Carroll et al. 2023, Lohman et al. 2025, Reali et al. 2021, Rudisill and Mohamed 2025). A critical political dimension shapes these dynamics. African governments operate within both domestic and international political contexts that often prioritize control over care. In response to global fears about opioid misuse, many states adopt highly restrictive policies to avoid the appearance of leniency (Jalali et al. 2020, Volkow and Blanco 2021). This “preventive stance” may serve political interests but often ignores the growing need for adequate pain relief (Otu et al. 2023). In some cases, drug policy is instrumentalized for governance, with law-and-order narratives dominating public discourse (Kwasi Eliason 2018, Alhassan 2022). Media portrayals reinforce these approaches, generating moral panic and further entrenching restrictive attitudes (Kennedy-Hendricks et al. 2019, Michaud et al. 2024).

A persistent challenge in opioid governance across sub-Saharan Africa is the chronic lack of reliable data on population-level need, consumption, and prescribing practices. For example, morphine consumption across Africa remains critically low—1.4 metric tons in 2022 compared with over 20 metric tons in the United States (International Narcotics Control Board 2023). Importantly, such disparities should not be interpreted as evidence of low clinical demand but rather in relation to the region’s substantial burden of cancer, advanced chronic illness, trauma, and palliative care need. Limited surveillance and reporting capacity means that many countries are unable to accurately estimate opioid requirements or monitor use over time (Berterame et al. 2016). As a result, import quotas are often set conservatively, reinforcing cycles of under-provision despite documented need. Even in cases where illegal use has been documented, like in Nigeria, similar epidemiological data are rare across the region (Jatau et al. 2021, Emmanuel et al. 2024, Kyei-Gyamfi et al. 2024, UNODC 2024).

Notably, many of the reforms proposed in this review are already reflected in continental policy commitments, including those articulated in the African Union Drug Policy Framework (Africa Union 2025). However, progress at the national level has been slow and uneven. This gap reflects deep political and institutional constraints, including the limited enforcement authority of supranational bodies, strong concerns over national sovereignty, the embedding of drug control within criminal justice systems, and the political sensitivity of opioids in the context of global drug control norms. As a result, while policy consensus often occurs at the continental level, implementation remains highly contested within member states. Achieving fair access will require coordinated reforms, stronger institutions, evidence-based guidelines, and a political commitment to prioritize public health and patient dignity.

Implications for policy and practice

The findings of this review underscore the need for more balanced and context-aware opioid policies across sub-Saharan Africa, grounded in documented clinical need for pain management and palliative care rather than consumption volumes alone. Low levels of opioid use should be interpreted in relation

to high burdens of cancer, advanced chronic illness, trauma, and limited palliative care coverage, alongside weak surveillance and reporting systems that constrain accurate estimation of need. Policy responses should therefore focus on aligning opioid availability with unmet need through proportionate regulatory reform, health system strengthening, and improved data systems, rather than on increasing prescribing volume *per se*. Where expansion of prescribing responsibilities is considered, this should be approached cautiously and accompanied by clear eligibility criteria, competency-based training, clinical supervision, and monitoring mechanisms to ensure patient safety and prescribing that is commensurate with need. Such measures are essential to avoid both under-treatment and the risks associated with poorly calibrated expansion. International partners, including multilateral agencies, bilateral donors, and professional associations, can support national efforts through technical guidance, workforce training, strengthening of data systems, and policy dialogue aligned with domestic health and regulatory governance structures. However, effective implementation ultimately depends on national ownership, contextual adaptation, and the integration of regulatory, clinical, and public health objectives. Strengthening these elements in tandem is critical to improving equitable access to essential opioid medicines while maintaining appropriate safeguards.

Strengths and limitations of the review

This review has several strengths. It synthesizes peer-reviewed literature, policy analyses, and gray literature to provide a comprehensive account of opioid access, regulation, and governance in sub-Saharan Africa. The use of an unrestricted search timeframe across multiple databases enhances coverage, while independent dual coding supported by a transparent thematic framework strengthens analytical rigor. By situating opioid access within legal, political, and institutional contexts, the review contributes a political economy perspective that is often missing from clinically focused discussions of opioid use in low- and middle-income countries.

Several limitations warrant consideration. The evidence base remains uneven across countries and regions, limiting the ability to draw consistently comparative conclusions. Much of the available literature is qualitative or policy-oriented, constraining causal inference and assessment of long-term outcomes. Most critically, reliable and disaggregated data on opioid consumption, prescribing practices, and unmet need are scarce. As a result, low opioid use is interpreted in relation to documented disease burden and limited palliative care coverage, but precise estimation of unmet need remains constrained by weak surveillance and reporting systems.

These limitations have implications for interpretation. Recommendations to improve access should not be understood as advocating indiscriminate expansion of opioid prescribing, but rather as calls for proportionate, need-informed reform supported by safeguards, training, and improved data systems. Without better measurement of need, poorly calibrated expansion risks reinforcing concerns about misuse and triggering more restrictive regulatory responses.

Finally, while international partners are referenced throughout the review, their roles vary substantially by context. Multilateral

agencies, bilateral donors, and professional associations primarily influence opioid access through technical guidance, capacity building, data system support, and policy dialogue, with their impact mediated by national governance structures and political priorities. This underscores the central importance of national ownership and contextual adaptation in efforts to improve opioid access.

Policy roadmap for balanced opioid governance in sub-Saharan Africa

The policy roadmap presented in Table 4 synthesizes the findings of this review into a structured, sequenced set of policy considerations for sub-Saharan Africa. The actions are illustrative and evidence-informed, derived from documented barriers, reported reform experiences, and identified governance gaps. They are not prescriptive templates, but options to be adapted to national legal, institutional, and political contexts.

The roadmap is organized around a clear logic of reform. First, reliable data on consumption, prescribing, and unmet need must be strengthened, as weak measurement systems underpin conservative quota setting and regulatory inertia. Second, legal and regulatory frameworks should be reviewed to ensure proportionality, aligning control measures with public health objectives while maintaining safeguards against diversion. Third, reforms must be operationalized through investments in workforce capacity, supply chain management, and financial protection mechanisms to translate formal availability into real access.

Institutional coordination across health, justice, and regulatory sectors is essential to reduce fragmentation and clarify accountability. Political leadership should be understood as an outcome of sustained stakeholder engagement and evidence translation, with deliberate efforts to reframe opioid policy within a public health and health equity lens. Finally, where epidemiological evidence indicates non-medical use, harm reduction and misuse prevention strategies should be implemented in parallel with access reforms to reduce morbidity and prevent policy backlash. Overall, the roadmap proposes a proportionate, need-informed approach to opioid governance that seeks to correct under-treatment without promoting indiscriminate expansion of prescribing.

Conclusions

This review highlights the interlocking legal, institutional, political, and sociocultural factors shaping opioid access in sub-Saharan Africa. Although opioids are internationally recognized as essential medicines for pain management and palliative care, their availability in the region remains constrained by restrictive or ambiguously interpreted legal frameworks, administrative bottlenecks, fragmented governance arrangements, weak supply chains, and limited data systems. Persistently low levels of opioid consumption, when interpreted alongside the region's substantial burden of cancer, advanced chronic illness, trauma, and limited palliative care coverage, indicate ongoing unmet need for adequate pain management. These structural barriers are reinforced by security-oriented political narratives and professional risk aversion, which together sustain regulatory

Table 4 Roadmap for policy considerations on opioid governance in sub-saharan Africa.

Domain ^a	Key policy actions ^b	Evidence identified in this review and contextual implications ^c
Evidence generation and agenda setting	Strengthen routine national reporting on opioid consumption, prescribing, and unmet need Conduct national assessments of pain burden and palliative care coverage Implement audience-specific public and professional communication strategies	Review identified widespread data gaps and reliance on international datasets; weak surveillance linked to conservative quota setting and regulatory caution Low consumption must be interpreted relative to documented disease burden; unmet need rarely quantified in included studies Stigma, opiophobia, and misinformation reported as barriers to prescribing and uptake; messaging should differ for clinicians, policymakers, patients, and the general public
Legal and regulatory reform	Review and clarify drug control laws to ensure proportionality between control and medical access Streamline administrative procedures for licensing, procurement, and storage Where supported by national capacity and reported country experience, consider regulated task-sharing in prescribing	Restrictive or ambiguously interpreted laws embedded in criminal codes contribute to regulatory conservatism and professional risk aversion Multi-layered approval systems and bureaucratic delays reported as barriers to facility-level access Concentration of prescribing authority limits geographic equity; evidence from selected case studies (e.g. integration of palliative care into district services) suggests decentralised models may function when linked to training, supervision, and monitoring safeguards
Health system strengthening	Introduce or strengthen prescription monitoring mechanisms Integrate structured pain management training into pre-service and in-service education Strengthen procurement forecasting and supply chain oversight Address financial barriers through insurance inclusion or subsidy mechanisms	Weak monitoring systems undermine trust and reinforce enforcement-oriented responses Professional risk aversion and limited confidence linked to knowledge gaps and stigma Recurrent stockouts and weak distribution systems undermine legal availability Limited insurance coverage and high out-of-pocket costs contribute to under-treatment despite formal availability
Governance and institutional coordination	Clarify mandates across health, regulatory, and enforcement institutions; coordination mechanisms may include inter-ministerial platforms where feasible Enable structured engagement of civil society and professional bodies Engage international technical bodies through formal partnership or technical consultation, depending on national capacity	Fragmented authority and overlapping mandates reported; coordination models should be adapted to institutional capacity rather than assumed Evidence from selected countries shows advocacy can influence reform; civic space varies across settings International actors influence regulatory posture; impact mediated by domestic governance structures
Political leadership and engagement	Build political support through stakeholder engagement, evidence translation, and alignment with national health priorities (e.g. UHC, cancer control) Reframe opioid policy within a public health and health equity perspective	Political will associated with reform progress in selected countries; security-dominant narratives sustain restrictive approaches Enforcement-oriented discourse contributes to regulatory conservatism; reframing may reduce risk aversion and enable proportionate reform
Harm reduction and misuse prevention	Where epidemiological evidence indicates non-medical opioid use, implement proportionate harm reduction and treatment interventions targeting affected populations Develop balanced communication strategies addressing safe medical use and misuse prevention	Rising tramadol and codeine misuse shapes political discourse and may trigger restrictive responses; targeted harm reduction can reduce morbidity while protecting medical access pathways Messaging should distinguish between clinical pain management and non-medical use; communication strategies should be tailored for clinicians, patients, at-risk populations, and the general public

^aThe primary policy thematic areas identified through analysis of included studies.^bKey policy actions derived from the synthesis of evidence across included studies that reflect recommended directions for reform.^cContextual implications highlight how findings from this review inform the feasibility, prioritization, or adaptation of each policy action across different settings. UHC, universal health coverage.

conservatism despite documented clinical need. Where improvements have occurred, they have been associated with political alignment around public health goals, targeted regulatory clarification, investments in workforce and supply systems, and structured engagement with civil society. However, such progress remains uneven and context-dependent. Advancing equitable access will require proportionate, evidence-informed reforms that align drug control with health system objectives, strengthen institutional coordination and data capacity, and situate opioid governance within broader commitments to health equity and public accountability.

Author contributions

S.N. conceptualized the idea, wrote the original draft, developed the methodology, performed data curation and formal analysis, and administered the project. R.A.A. provided supervision and contributed to writing through review and editing. J.C.M. contributed to data curation and participated in writing through review and editing.

Supplementary material

Supplementary material is available at [Health Policy and Planning](#) online.

Conflicts of interest

None declared.

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Data availability

All data produced or examined during this study are provided in this published article and its supplementary information files.

Ethical approval

This systematic review is based entirely on secondary data from peer-reviewed articles published in reputable journals and did not involve the collection of primary data or direct engagement with human participants. The review was conducted in accordance with rigorous methodological and reporting standards, following established ethical principles for research integrity, transparency, and scientific rigor. As such, formal ethical approval was not required.

Reflexivity statement

The authors are all male and represent different levels of seniority. The first author is a PhD candidate in Health Policy, Planning, and Management at the University of Ghana, with a research focus on health policy, public health pharmacy, health governance, climate-

health nexus, and health system strengthening. He holds an MPhil in Pharmaceutics from Kwame Nkrumah University of Science and Technology, where his research examined medicine quality and regulatory policy. The second author is an Associate Professor at the University of Ghana with extensive research experience in Health Policy, Management, and Systems Evaluation. He has been actively involved in mentoring the first author. The third author is a registered general nurse in Ghana, currently practicing in the United Kingdom. He holds an MPH from Liverpool John Moores University and has a strong interest in opioid use and pain management. Collectively, the team brings complementary expertise in drug policy, opioid governance, and health system research, which shaped the design, analysis, and interpretation of this review.

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