CONFERENCE ABSTRACTS

ORAL (IN-PERSON) PRESENTATIONS
ENGLISH

WAPCP-2026-PCH-043-IP001

Antimicrobial Resistance and Pharmaceutical Sovereignty in Low- and Middle-Income Countries: A Strategic Framework for Revitalizing Local Production

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Background: Antimicrobial resistance (AMR) represents a major threat to health systems and disproportionately affects low- and middle-income countries. In these settings, structural dependence on antibiotic importation, unstable supply chains, and circulation of medicines of variable quality weaken therapeutic effectiveness and compromise health sovereignty. Revitalizing local production requires an integrated understanding of the structural drivers shaping antibiotic use and resistance emergence.

Objectives: To map existing evidence on AMR, antibiotic use practices, and socio-economic determinants in order to identify strategic levers for strengthening local pharmaceutical industry and antimicrobial governance in West Africa.

Methods: A scoping review was conducted following the Arksey and O'Malley framework and reported according to PRISMA-ScR guidelines. Literature searches were performed on studies published between 2010 and 2026 in English or French. All types of studies conducted in LMICs examining AMR patterns, antibiotic use practices, and socio-economic determinants influencing AM use within a One Health perspective were considered. Titles and abstracts were screened according to predefined inclusion and exclusion criteria.

Results: The literature search identified 1,362 records, of which 97 studies met the inclusion criteria after screening and full-text assessment. Evidence highlights widespread non-prescription antibiotic use reported in 40-60% of community studies, heterogeneous prescribing practices and limited regulatory oversight in many LMIC settings.

Socio-economic determinants including household income, access to healthcare services, availability of essential medicines, and prescriber training strongly influence antibiotic use patterns. Approximately one-third of the included studies were conducted in sub-Saharan Africa, where integrated One Health surveillance systems remain limited.

Conclusion: This review proposes a strategic framework linking local production, pharmaceutical regulation, and rational antibiotic use. It emphasizes that sustainable health sovereignty depends on structural transformation of regional pharmaceutical markets through coordinated industrial, regulatory, and capacity-building efforts.

Keywords: Antimicrobial resistance; Pharmaceutical industry; Health sovereignty; Local production; One health

WAPCP-2026-PCL-016-IP002

Observation of Documentation of Client-Pharmacist Interactions in Community Pharmacies in Lagos State, Nigeria

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Background: Pharmacists interact with clients in community pharmacies but may not always keep records. This may result in poor patient follow-up and outcome.

Objectives: The aim of this study was to identify the interactions that occur between clients and pharmacists in community pharmacies and the documentation of such interactions.

Methods: The study was descriptive and cross sectional. Twenty community pharmacies were selected through multistage sampling. Non-participant observation was carried out on 10 client-pharmacist interactions in each of the selected community pharmacies.

Results: More female (58.5 %) than male, and more adults (94.0 %) than children visited the community pharmacies. Clients visited community pharmacies to make requests, lay complaints, show their symptoms or follow up care. Activities observed during the visits included discussions (176, 88%), sales (160, 80 %), treatment (94, 47 %), health screening (64, 32%), and refill (43, 21.5 %). Documentation was reported for 158 (98.8%) sales, 40 (93 %) refills, 10 (5.7 %) discussions, 4 (4.3%) treatments and 0% referrals. The interactions observed in the community pharmacies were not significantly associated with the gender of the clients (p=0.98). There was statistically significant association between the client-pharmacists' interactions and the clients' age group, and between the documentation of client-pharmacist interactions and the community pharmacy personnel (p = 0.001, respectively).

Conclusion: The study identified client-pharmacist interactions in community pharmacies in Lagos State, Nigeria and their documentation, which provide data on client sociodemographic characteristics, purpose of visit, intervention by the community pharmacies and outcome of the intervention. Routine documentation of client-pharmacist interactions should be made mandatory in community pharmacies.

Keywords: Client-Pharmacist interactions; Observation; Documentation; Community pharmacy; Lagos

WAPCP-2026-PMB-023-IP003

A Silent Crisis: Multidrug-Resistant Pathogens in Wounds from Secondary Hospitals in the Volta Region of Ghana

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Background: Effective wound management is essential as it improves patient care, satisfaction and quality of life. Wound management is further complicated by the emergence of antibiotic resistance among pathogens associated with wound infections. Considering the significant burden that wounds place on the healthcare system, it is essential to understand the common microorganisms associated with wound infections and their resistance patterns to guide effective treatment.

Objective: The objective of the study was to determine the prevalence of multidrug-resistant (MDR) organisms from wounds classified according to the World Health Organization Bacterial Priority Pathogens List (WHO BPPL).

Methods: This study was conducted in two secondary healthcare facilities (Volta Regional Hospital and Margret Marquart Catholic Hospital) in the Volta Region of Ghana using a retrospective cross-sectional design. Routine culture and antimicrobial susceptibility testing data for bacteria isolated from wounds between January 2022 and December 2024 were analysed using the WHONET software.

Results: A total of 204 isolates were obtained from the two hospitals, of which 119 (58.3 %) were from Volta Regional Hospital and 85 (41.7 %) were from Margret Marquart Catholic Hospital. Staphylococcus aureus was the most frequently isolated pathogen, accounting for 22.5 % of all isolates. Proteus mirabilis (19.1 %), Escherichia coli (10.3 %), Pseudomonas aeruginosa (9.8 %), and Klebsiella pneumoniae (5.9 %) were also isolated in considerable proportions. Focus was, however, placed on organisms classified as 'critical priority' and 'high priority' on the WHO BPPL. E. coli, K. pneumoniae, Acinetobacter sp. and Enterococcus faecalis all showed MDR rates exceeding 90 %.

Conclusion: The data suggests a high prevalence of MDR pathogens in wound isolates, particularly among organisms classified as critical and high priority on the WHO BPPL.

Keywords: Wounds; Multidrug Resistant Pathogens; Secondary Hospitals; Volta Region of Ghana

WAPCP-2026-PHA-030-IP004

Investigating Personalized Dose Adjustment of Sulphonylureas in Elderly Patients with Diabetic Kidney Disease in Tamale Teaching Hospital (TTH) - Ghana

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Background: Diabetic kidney disease remains the leading cause of end-stage kidney disease often necessitating long-term kidney replacement therapy. However, its prevalence has shown little to no decline over the past three decades. Older adults are particularly at risk, and managing it pharmacologically poses considerable challenges.

Objectives: This study determines the prevalence of diabetic kidney disease, prescription pattern of physicians with regards to the Sulphonylureas in elderly patients with diabetic kidney disease, possible side effects associated with the use of Sulphonylureas in elderly patients with diabetic kidney disease.

Methods: A retrospective cross-sectional study design was employed to review medical records of patients from January 1, 2023 to December 31, 2024. Patients who met the inclusion criteria were used. The data was analyzed using STATA version 17.

Results: This study employed 117 patients diagnosed with diabetic kidney disease with prevalence of 2.55 %. Gliclazide was the most frequently used.

Majority of patients (97; 82.98%) were initiated on appropriate doses of sulfonylureas and only 32 participants (27.66%) subsequently received personalized dose adjustments.

The documented side effects associated with sulfonylurea therapy included hypoglycemia in 44 patients (37.51 %), nausea in 29 patients (25 %), and abdominal pain in 24 patients (20.83 %).

Conclusion: Sulphonylureas in elderly patients presents notable risks, particularly when monitoring and personalized dose adjustments are suboptimal. The findings underscore the need for individualized treatment protocols, renal function monitoring, and stronger pharmacovigilance systems to enhance the safety and effectiveness of Sulphonylurea therapy.

Keywords: Diabetic Kidney Disease; Sulphonylureas; Personalized dose

WAPCP-2026-PCT-013-IP005

Rapid Detection and Quantification of Fluoroquinolone Antibiotic Residues in Pharmaceutical Formulations and Human Urine by Fluorescence Spectroscopy

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Background: Fluoroquinolones are a major class of synthetic antibiotics widely used in human and veterinary medicine. Their quantification in pharmaceutical formulations is essential for quality control, while their presence in human urine reflects drug excretion and may contribute to environmental contamination and antimicrobial resistance. This study aims to develop and validate a rapid spectrofluorimetric method for the detection and quantification of fluoroquinolones.

Objectives: To develop a reliable method, in conventional (FLUO) and automatic (AUTOFLUO) modes, for the detection and quantification of ofloxacin (OFX) and norfloxacin (NFX) in pharmaceutical formulations and human urine.

Methods: Analytical parameters influencing fluorescence, including pH and excitation/emission wavelengths, were optimized, with a pH of 4 selected. FLUO measurements used excitation maxima of 275 nm (OFX) and 287 nm (NFX) with emissions at 484 nm and 435 nm, respectively. AUTOFLUO measurements used 275 nm and 280 nm diodes for excitation, generating emissions at 502 nm (OFX) and 435 nm (NFX). Limits of detection (LOD), precision, and recovery rates were

evaluated according to standard protocols.

Results: The FLUO method achieved LODs of 26.17 ng mL^{-1} (OFX) and 6 23 ng·mL^{-1} (NFX). AUTOFLUO improved sensitivity significantly (0.07 ng mL^{-1} for OFX and 0.03 ng mL^{-1} for NFX). Precision was below 5 %, with recoveries ranging from 93.75-102.40 % in pharmaceutical formulations and 97.08-102.08 % in urine, demonstrating high reproducibility and accuracy.

Conclusion: The AUTOFLUO method provides a sensitive, rapid, and reliable approach for monitoring fluoroquinolone residues in pharmaceutical products and human urine, offering a practical alternative to conventional chromatographic techniques for quality control and public health surveillance.

Keywords: Fluoroquinolones; Fluorescence spectroscopy; Automatic monitoring, Pharmaceutical formulations

WAPCP-2026-PCT-017-IP006

Quality Evaluation of Dermatological Creams Formulated with Salicylic Acid and Bioactives from Shea Butter

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Background: Performance of dermaceutical creams depends on the physicochemical properties of the formulation base and the concentration of active ingredients. Shea butter and white soft paraffin are widely used emollient and occlusive bases with differing physicochemical profiles.

Objective: This study formulated dermatological salicylic acid creams using shea butter and white soft paraffin as bases, assessing base suitability and optimal active concentration.

Methods: Five creams of the bases containing salicylic acid concentrations ranging from zero to two percent were formulated using the fusion method. Organoleptic and physicochemical properties were evaluated. Functional performance was assessed through antioxidant activity, in-vitro occlusion and drug release studies. Stability was evaluated using freeze thaw cycles and short-term storage. The type of creams formulated were determined using filter paper test.

Results: All formulations were oil-in-water creams with pseudoplastic flow behaviour. White soft paraffin creams showed higher viscosity of fifty-six thousand to eighty-five centipoise while shea butter creams demonstrated better spreadability from seventeen to twenty-five gram centimetres per second. Salicylic acid concentrations below two percent showed the best balance of stability, antioxidant activity and drug release.

Conclusion: White soft paraffin formulations are ideal for occlusive therapy and sustained topical delivery while shea butter formulations are best for cosmetic dermatological application. This highlights the critical role of base employed and active ingredient concentration in the production of dermatological formulations.

Keywords: Shea butter creams; White soft paraffin creams; Physicochemical properties; Antioxidant

WAPCP-2026-PCG-040-IP007

Availability of Priority Life-Saving Medicines for Obstetric, Neonatal, and Infectious Emergencies in Senegal: Secondary Analysis of the 2019 SPA Survey

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Background: The availability of priority life-saving medicines reflects the health system's capacity to respond to obstetric, neonatal, and infectious emergencies in Senegal.

Objectives: To assess the availability of medicines (for obstetric, neonatal and infectious emergencies) and identify structural factors associated with an acceptable level (≥ 50%) in health facilities.

Methods: Secondary analysis of data obtained from the 2019 Service Provision Assessment survey conducted under the DHS Program, was done. The analysis included 425 health facilities. Availability, measured on the day of the survey, was estimated using a basket score corresponding to the proportion of available items among those assessed. Logistic regression examined factors associated with availability ≥50%, adjusted for facility type, managing authority, and

geographic zone.

Results: The overall mean availability (59 items) was 44.2 %, and 40.2 % of facilities reached ≥ 50%. By groups, availability was: delivery room medicines (59.9 %) covering postpartum hemorrhage, pre-eclampsia/eclampsia, obstetric infections, and neonatal resuscitation; maternal health medicines (54.6%) for antenatal care and prevention of malaria in pregnancy, anemia, and eclampsia; antimalarials (50.7 %) for uncomplicated and severe malaria treatment; contraceptives (45.4 %) for family planning services; and antibiotics/general medicines (38.0 %) for pneumonia and various infections. Hospitals were more likely to achieve ≥ 50% aOR = 9.94; p = 0.004, while private for-profit facilities were less likely aOR = 0.14; p = 0.003. Geographic zone was not significant. The model explained 28 % of the variance.

Conclusion: Availability remains insufficient, with disparities according to facility level and managing authority.

Keywords: Medicine availability; Obstetric; Neonatal; Infectious; Emergencies; Senegal

WAPCP-2026-SEN-046-IP008

Wound Healing and Anti-infective Activities of the Aqueous Extract of *Momordica charantia* Leaves

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Background: The use of medicinal plants as therapeutic agents is a major challenge that can contribute to improving healthcare systems. Indeed, they represent an accessible alternative in the context of resource scarcity and are an important source of bioactive compounds. It is with this perspective that we studied the wound healing and anti-infective activities of *Momordica charantia*, a plant widely used to treat wounds and to fight infections.

Objectives: To evaluate the wound-healing and antimicrobial properties of the aqueous extract of *Momordica charantia* leaves.

Methods: The leaves were dried, then pulverised. An aqueous extraction was performed, and the resulting extract was characterised. Simple topical formulations were prepared using *M. charantia* leaf powder, Vaseline, and lanolin. Wound healing activity was evaluated using an experimental burn wound model in rats. *In vitro* antimicrobial screening was performed using the well diffusion test.

Results: Phytochemical screening revealed phenolic compounds (flavonoids, condensed tannins) and alkaloids. The topical formulation exhibited complete and significant wound-healing activity. *M. charantia* leaf powder demonstrated concentration-dependent antibacterial and antifungal activity against *Staphylococcus aureus, Escherichia coli,* and *Candida albicans*, with significant inhibition zones at the tested concentrations.

Conclusion: The results confirm the claims associated with the traditional use of *M. charantia* leaves, which could represent a promising source of bioactive compounds for wound management.

Keywords: *Momordica charantia*; burn; wound healing; infection

WAPCP-2026-SEN-047-IP009

Medicinal Plants of Louga (Senegal): Ethnopharmacological Survey and Therapeutic Potential of Local Plant Species

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Background: The Louga region in northern Senegal is home to a rich biodiversity and a vibrant traditional medicine system supported by traditional healers. Although these practices constitute a pillar of local health sovereignty, their industrial potential remains underexploited.

Objectives: To document, through ethnobotanical surveys, the plants used in traditional medicine by traditional healers in Louga to treat common pathologies (diabetes, hypertension, infections). - To identify priority species for local pharmaceutical development.

Methods: Semi-structured ethnopharmacological surveys were conducted with 15 recognized traditional healers (snowball sampling). Botanical identification of the cited plants was performed (herbarium and database). Quantitative analysis included Frequency of Citation (Fc), Use Value (UV), and Family Use Value (FUV).

Results: 38 plants were identified, including Guiera senegalensis (26.67 % of citations for cough suppressant) and Ziziphus mauritiana (antihypertensive). Traditional healers in Louga prefer local preparations (decoctions, powders). Twelve species showed potential for local production (active ingredient extraction).

Conclusion: These ethnopharmacological studies highlight the role of plants used in traditional medicine and traditional healers in revitalizing local pharmaceutical production. Establishing the agro-industrial sector in Louga to support health sovereignty is recommended.

Keywords: Ethnopharmacology survey; medicinal plants; traditional healers; therapeutic potential; Senegal

WAPCP-2026-SEN-048- IP010

Non-Medical Use of Psychoactive Drugs in Senegal: User Profiles, Products, Meanings of Use, and Access

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Background: The use of psychoactive drugs for non-medical purposes is a current and growing phenomenon in the world, including in Senegal. These products act on the nervous system and can cause health problems. They are subject to pharmaceutical regulations in Senegal.

Objectives: This communication aims to describe the social profiles of users, their practices, the meanings attributed to their consumption and the methods of access to products.

Methods: This study is based on immersion in various social settings (healthcare environment, working-class neighborhoods) and on interviews with 29 users in Dakar, Mbour and Kaolack.

Results: The results reveal three categories of users: those encountered in the tourism sector, those who have developed addictions related to medical prescriptions, and those we have termed "codeine users." Our research identified codeine-based medications (Phenergan, Euphon, Neo- Codion), analgesics (tramadol), and tranquilisers (Alpraz). Users deploy various drug consumption practices, including injection and the combined use of substances such as medications, soft drinks or cannabis. Each practice is linked to meanings related to work performance, the pursuit of intoxication or the evasion of worries. Users obtain their supplies from pharmacies and through other channels (markets, peer networks).

Conclusion: Users attribute meanings to their practices and consumption, outside prescribed norms, and define access routes to these normally regulated medications.

Keywords: Uses; Practices; Psychoactive drugs; Non-medical; Senegal

WAPCP-2026-SEN -049-IP011

Monitoring and Analysis of Drug Prescriptions in the Intensive Care Unit: Towards Optimizing Medication Management

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Background: The intensive care unit (ICU) is a high-risk medication environment characterized by treatment complexity, patient instability, and a high frequency of therapeutic changes. Rigorous monitoring of drug prescriptions is therefore essential to ensure the safety and efficacy of care.

Objectives: To evaluate the impact of pharmaceutical monitoring in the ICU through statistical analysis of prescriptions, optimisation of medication orders, and the application of clinical pharmacy at the patient's bedside.

Methods: A prospective analysis was conducted using clinical and therapeutic data from patients hospitalized in the ICU between 11 March 2025 and 10 May 2025. Data collection was carried out using patient records. Collected data were analysed using Excel, R software and PIM-check.

Results: The study included 23 patients hospitalised in the intensive care unit. The mean age was 39 years, ranging from 12 to 94 years. The population was predominantly female (65%). A total of 139 prescriptions were analysed, comprising 55 different molecules. Meanwhile, 88 % of prescriptions contained at least one of these medications: an antibiotic, 95% a sedative, 56 % an anticoagulant, 16 % a amine. The analysis of the Patient data, by selecting pathologies and medications received, made it possible to note omitted prescriptions, over-prescriptions and drug interactions.

Conclusion: This study highlights the high frequency of polypharmacy and the presence of high-risk drug combinations in the intensive care unit. Integrating the clinical pharmacist into the ICU team optimizes care quality, enhances patient safety and streamlines medication management.

Keywords: Clinical Pharmacy; Optimization; Prescriptions; Inappropriate medications

WAPCP-2026-SEN -050-IP012

Modeling and Optimization of the Thermal Extraction Process of Bioactive Compounds from *Hibiscus sabdarifa* (Malvaceae) Juice

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Background: *Hibiscus sabdariffa* is a plant rich in bioactive compounds with nutritional and therapeutic properties. Extraction yield and quality depend on the temperature, making process optimisation necessary.

Objective: Define the optimal extraction temperature conditions while preserving the qualities and nutritional properties of the constituents of the juices obtained.

Methods: Extracts were prepared using 15 g of calyx in 150 ml of water at different temperatures: 25, 50, 100, and 150 ^{O}C, for a constant extraction time of 2 hours. Molecular absorption spectrophotometry was used to quantify phytochemical compounds and evaluate their free radical scavenging activity. Mineral elements were quantified by atomic absorption spectroscopy.

Results: Juice production at 100 ^{O}C yielded a greater concentration of phytochemicals: flavonoids 66.6 mg QE/100g, total polyphenols 49.3 mg GAE/100 g, and total phenols 13.8 mg GAE/100 g. At 150 ^{O}C, the amounts obtained were: 47.6 mg GAE/100 g, 12.502 mg GAE/100 g, and 57.5 mg QE/100 g for polyphenols, total phenols, and flavonoids, respectively. The results also showed better free radical scavenging activity for the juice obtained at 100 ^{O}C compared to the other juices. Indeed, the highest inhibition percentage was obtained with the lowest concentration of juice extracted at 100 ^{O}C (0.4 mg/ml). For macronutrients, Ca and K were more concentrated at 150 ^{O}C, with 106.06 mg/100g and 49.53 mg/100g, respectively.

Conclusion: Extraction at 100 ^{O}C maximizes bioactive compounds and antioxidant activity, while 150 ^{O}C favours macronutrients, demonstrating the nutritional and pharmaceutical potential of Hibiscus sabdariffa.

Keywords: *Hibiscus sabdarifa*; Polyphenol; Temperature; Antioxidant; Bioactive compounds

WAPCP-2026-SEN-051-IP013

The Medicinal Flora of the Commune of Popenguine (Senegal): Ethnobotanical Exploration and Development of Traditional Medicinal Plants

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Background: The district of Popenguine, featuring a protected nature reserve, is home to a diverse medicinal flora used by local populations to treat various ailments. However, human pressure and modernisation threaten the transmission of this ethnobotanical knowledge.

Objectives: This study aims to contribute to the knowledge and development of medicinal species used in the district of Popenguine.

Method: The study was conducted in October 2024 in the villages of Ndayane, Popenguine Sérère and Tongor. Data were collected through semi-structured individual interviews to avoid any influence between participants.

Results: The results showed that the population of the three villages uses a rich flora of 49 species distributed among 42 genera and 30 families. Fabaceae were the most represented at 16.4 %, followed by Combretaceae (8.2 %). Moringa oleifera was the most commonly used species (27.27 %), followed by Senna occidentalis (24.24 %) and Guiera senegalensis (22.22%). In terms of the conditions treated, infectious diseases were the most frequently cited (32 %), followed by chronic fatigue, sexual impotence, etc. Analysis by plant part used revealed that leaves (79 %) were the most frequently used organs, and decoction was the most common preparation method (40 %).

Conclusion: This study highlights the importance of herbal medicine in this community. It provides a useful basis for contributing to the development of our Senegalese Pharmacopoeia.

Keywords: Medicinal plants; Popenguine; Senegal; Development; Traditional medicinal plants

WAPCP-2026-SEN-052-IP014

A Study of Human Leukocyte Antigen Profiles between Donor-Recipient Pairs for Kidney Transplantation in Senegal

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Background: Prior to twenty twenty-three, dialysis was the only renal replacement therapy available in Senegal. The establishment of the Ouakam Military Hospital and Le Dantec Hospital consortium enabled the country's first kidney transplant program. Assessing tissue compatibility between donors and recipients was a critical step in this effort.

Objectives: This study aimed to characterize Human Leukocyte Antigen allele frequencies and assess anti-human leukocyte antigen sensitization among the first cohort of donor-recipient pairs in Senegal's kidney transplant program.

Methods: The study included seventeen donor-recipient pairs and nine recipients awaiting donors at the Ouakam Military Hospital. Genotyping was performed using the PCR-SSO method on a Luminex platform. Anti-human leukocyte antigen antibody screening and identification were carried out using the single antigen bead method, with a positivity threshold of one thousand mean fluorescence intensity units.

Results: The most frequently observed alleles across both classes were A two, B fifty-three, C seven, DRB three/four/five zero-two, DQA one zero-five and DPA one zero-two. Anti-

Human Leukocyte Antigen antibodies were detected in over half of the recipients paired with donors, with specificities predominantly directed against class one and class two antigens. Among the sensitized recipients, three were found to carry donor-specific antibodies.

Conclusion: This study provides the first characterization of human leukocyte antigen profiles within Senegal's emerging kidney transplant program. These preliminary findings offer a foundation for donor selection strategies and highlight the need for larger-scale studies to better define human leukocyte antigen diversity in the Senegalese population.

Keywords: Human leukocyte antigen typing; Histocompatibility, Donor-Recipient Pairs; Senegal

WAPCP-2026-SEN-053-IP015

Synthesis of Piperidine Derivative Molecules and Natural Molecules: Study of Antimalarial Activity

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Background: Malaria remains a major public health problem worldwide due to its high morbidity and mortality, particularly in tropical and subtropical regions. It is still a significant cause of death in children under five years of age. Faced with the emergence and spread of Plasmodium falciparum strains resistant to conventional antimalarial drugs, the development of new, effective, and selective therapeutic molecules constitutes a major challenge.

Objectives: In this context, the objective of this work is the synthesis and evaluation of the antimalarial activity of new heterocyclic molecules from piperidine derivatives and derivatives of betulonic and ursolic acids, two natural triterpenoids with interesting pharmacological potential.

Methods: The synthetic strategies employed relied on several reaction approaches, including nucleophilic substitution reactions, coupling reactions using coupling agents, and reductive amination reactions carried out in the presence of sodium cyanoborohydride and $ZnCl_2$. The resulting compounds were characterised by spectroscopic methods, including nuclear magnetic resonance and infrared spectroscopy. The antimalarial activity and cytotoxicity of the synthesised compounds were tested in vitro on susceptible and resistant strains of Plasmodium falciparum.

Results and conclusion: Among the molecules studied, a derivative of betulonic acid showed the most promising activity with an IC_{50} value of 0.0123 ± 0.0017 µM and a selectivity index significantly favourable to chloroquine, suggesting an interesting potential for the development of new antimalarial agents.

Keywords: *Plasmodium falciparum*; Malaria; Heterocycle; Cytotoxicity; Traditional Medicine; Senegal

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Psychosocial Factors Influencing Dextromethorphan-Containing Cough Syrup Abuse among the Youths: A Cross-Sectional Study in the Tamale Metropolis of Ghana

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Background: Substance abuse is a significant public health concern among adolescents and young adults globally. Some commonly misused substances include cough syrup, alcohol, and cannabis. Dextromethorphan (DXM) containing cough syrup, has emerged as one of the most frequently abused nonprescription medications.

Objectives: The study aimed to identify psychological and social determinants associated with DXM abuse, assess the awareness and perceptions of the health risks associated with DXM abuse among the youths, and to provide recommendations for targeted prevention and intervention strategies.

Methods: This study employed snowball sampling to identify and recruit cough syrup abusers in the Tamale Metropolis. Given the sensitive and clandestine nature of illicit substance use, this sampling approach was deemed most appropriate for accessing this hard-to-reach population. Initial participants were identified through a rehabilitation center and subsequently served as community gatekeepers, facilitating researcher access and establishing trust within the target community.

Results: Of the total population sampled, 55.5% and 44.5% comprised of male and female participants, respectively. Dextromethorphan abuse demonstrated significant associations with peer influence, $r=0.58$, $p<0.001$, psychological distress (85.5%), unemployment, $r=0.32$, $p<0.001$, and insufficient parental supervision, $r=0.25$, $p=0.001$. Participants identified deficiencies in current prevention strategies and advocated for comprehensive educational interventions and increased access to mental health services.

Conclusion: Psychosocial vulnerabilities and socioeconomic factors, rather than knowledge gaps, emerged as the primary drivers of dextromethorphan misuse among youths in Tamale. These findings underscore the necessity for comprehensive, integrated interventions that address the root psychosocial determinants of substance misuse.

Keywords: Dextromethorphan abuse; Psychosocial factors; Youth; Tamale Metropolis; Ghana