

Evaluation of Good Hospital Pharmacy Practices in the University Clinics of Kinshasa

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Abstract

The hospital pharmacy plays a central role in ensuring the safety and efficacy of healthcare. The implementation of Good Pharmacy Practices (GPP, WHO; Basel Statements, FIP) is essential to guarantee the quality of pharmaceutical services; however, few data are available on their application in the Democratic Republic of Congo. To assess the level of compliance with Good Hospital Pharmacy Practices in the University Clinics of Kinshasa and identify areas for improvement. A cross-sectional descriptive study was conducted between January and June 2025. The audit focused on 20 key indicators in six areas: governance and organization, procurement, stock management, dispensing, pharmacovigilance and safety, and human resources. Data collection used direct observation, structured questionnaires, and checklists based on international standards. The compliance score was calculated as a percentage for each area and for the overall assessment. The overall good practice compliance score was 85%, reflecting a high level of compliance. Compliance rates by area were: governance & organization (100%), procurement (100%), stock management & storage (100%), dispensation (67%), pharmacovigilance & safety (67%), and human resources & training (50%). Strengths include structured organization, standardized procedures, and qualified staff. The main areas requiring improvement are batch traceability, pharmacovigilance, and ongoing training. The CUK hospital pharmacy maintains a high level of compliance with good practice, serving as a reference model for other hospitals in the DRC. Targeted actions, including strengthening pharmacovigilance, implementing systematic stock monitoring, and providing ongoing staff training, are recommended to achieve optimal compliance and ensure patient safety.

Keywords: Hospital pharmacy, Good pharmaceutical practice, Pharmacovigilance, University clinics of Kinshasa

INTRODUCTION

State the objectives of the work and provide an adequate background. The hospital pharmacy is at the heart of the modern healthcare system, ensuring the availability, quality, and rational use of medicines and medical devices. In addition to its technical functions, which include the selection, supply, storage, and dispensing of medicines, it plays an active role in ensuring patient safety, combating drug-related errors, and rationalizing costs [1]. In a global context marked by the growing complexity of treatments and the rise of antimicrobial resistance, the application of recognized standards, such as the WHO's Good Pharmacy Practices (GPP) or the Basel Statements of the International Pharmaceutical Federation, has become essential [2].

In sub-Saharan Africa, several studies highlight the diversity and disparities in the implementation of these good practices. Acheampong *et al.* (2019) [3], in a study of six countries, showed that while some countries, such as Ghana and Uganda, have achieved a high level of adherence to international standards, others, such as Malawi, have serious shortcomings, particularly in the management of medicines

and the ongoing training of staff. Similarly, in Ethiopia, Kerie *et al.* (2024) [4] highlighted the absence of key structural elements, such as pharmacovigilance committees, which compromise the optimal functioning of hospital pharmacies. These findings underscore the importance of conducting

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regular, context-specific evaluations of pharmaceutical practices in African hospitals [4-9].

In the Democratic Republic of the Congo (DRC), the challenges associated with organizing the drug supply chain remain considerable, including limited financial resources, sometimes unsuitable infrastructure, a shortage of qualified human resources, risks of counterfeiting, and weak monitoring and evaluation systems. However, the University Clinics of Kinshasa stands out as a reference center, with a structured hospital pharmacy, qualified staff, and a commitment to quality and continuous improvement. Nevertheless, despite these assets, little scientific data has been published on the evaluation of Good Pharmaceutical Practice in this leading establishment.

The central question is to what extent the University Clinics of Kinshasa apply Good Hospital Pharmacy Practice, and what factors promote or limit its effective implementation?

In this context, this study aimed to assess the implementation of and compliance with Good Hospital Pharmacy Practice at the University Clinics of Kinshasa. The level of compliance with international standards (WHO, FIP, EAHP) will need to be measured for this purpose.

MATERIALS AND METHODS

Type and Framework of the Study

This was a descriptive, cross-sectional, and analytical study conducted in the hospital pharmacy of the University Clinics of Kinshasa. Data were collected between July and September 2025.

Target Population and Sampling

The study population comprised pharmacy staff (pharmacists and pharmacy assistants) and pharmacy management documents (procedures, registers, stock records, activity reports).

Inclusion Criteria

Staff working in the University Clinics of Kinshasa hospital pharmacy for at least 6 months were included in this study. Official hospital pharmacy documents used during the study period.

Exclusion Criteria

This study excluded staff on probation or temporary contracts, as well as incomplete or unvalidated documents. Exhaustive sampling was used to include all permanent staff and all available documents.

Collection Tools and Instruments

We used the direct observation guide based on the standards of the WHO (1996), the International Pharmaceutical Federation (FIP, 2008), and the EAHP (2014), the structured questionnaires administered to pharmaceutical and nursing

staff, and a checklist for assessing compliance with practices (supply, storage, dispensing, preparation, pharmacovigilance).

Variables Studied

The variables studied in this study were the following:

- *Organisation and governance*: existence of committees (pharmacotherapeutic, pharmacovigilance), organization chart, written procedures.
- *Drug management*: selection, procurement, receipt, storage, distribution, dispensing, stock monitoring.
- *Clinical practices*: pharmaceutical validation of prescriptions, therapeutic monitoring, and management of undesirable effects.
- *Human and material resources*: staff qualifications, infrastructure, equipment.
- *Quality and safety*: existence of a quality system, traceability, internal audits.

Data Analysis

The data collected were entered and analyzed using Microsoft Excel version 16.

RESULTS AND DISCUSSION

Table 1 presents the study results for the 20 key indicators, categorized into six main areas.

The results by area show that the University Clinics of Kinshasa pharmacy has:

- 4/4 indicators satisfied (100%) in relation to governance and organization. The pharmacy has an up-to-date organization chart, an active pharmaceutical committee, and standardized procedures.
- 4/4 indicators satisfied (100%) in relation to procurement; the pharmacy has purchasing procedures and quality control for medicines.
- 4/4 indicators satisfied (100%) with stock management and storage of medicines, storage conditions are generally respected, with physical security of stocks, and there is the presence of functional storage equipment (refrigerator, freezer).
- 2/3 satisfied indicators (67%) for dispensing medicines. Pharmaceutical verification of prescriptions is effective, but complete traceability at the patient level remains limited.
- 2/3 indicators satisfied (67%) with pharmacovigilance and safety, the existence of a system for reporting and monitoring adverse drug reactions.
- 1/2 indicators satisfied (50%) with human resources and training: staff are qualified, but the continuous training plan is not systematically applied.

The overall score for compliance with good hospital pharmacy practice was estimated at 85% (15/18 validated indicators), reflecting high compliance with international

standards (WHO, FIP, EAHP).

Table 1. Results of the study of the application of Good Hospital Pharmacy Practice at the University Clinics of Kinshasa

N°	Area	Applicable indicators	Compliant indicators	Rate of compliance (%)
1	Governance and organization	4	4	100%
2	Procurement	4	4	75%
3	Stock management and storage	4	4	75%
4	Dispensing	3	2	67%
5	Pharmacovigilance and safety	3	2	67%
6	Human resources and training	2	1	50%
	Total	20	17	85%

The evaluation of good hospital pharmacy practice at the University Clinics of Kinshasa showed an overall score of 85%, reflecting a high level of compliance with international standards (WHO, FIP, EAHP). This result reflects the major efforts made by the University Clinics of Kinshasa pharmacy in terms of organization, staff qualifications, and the introduction of standardized procedures, in a national context marked by structural and logistical constraints.

This score is in the upper range of published data for sub-Saharan Africa. Indeed, Acheampong *et al.* [3] showed that adherence to Basel Statements varied considerably across countries, ranging from modest results in Malawi to higher performance in Ghana and Uganda. The University Clinics of Kinshasa score approaches the performance of the highest-ranked African countries, demonstrating a real institutional commitment to pharmaceutical quality.

In Ethiopia, Kerie *et al.* [4] found significant weaknesses in hospital quality assurance systems, including the absence of pharmacovigilance committees and modern traceability systems. In contrast, the performance observed at University Clinics of Kinshasa suggests that processes are better structured and governance is more robust, even if certain shortcomings persist.

Several factors may explain this good result, namely the presence of qualified and stable staff, guaranteeing continuity of services [1], the existence of written procedures for the main stages in the medication circuit, the institutional commitment of the University Clinics of Kinshasa, which are part of a university mission of excellence in care, teaching and research, these factors are consistent with the findings of the International Pharmaceutical Federation [2], according to which establishments that invest in training and organizational structuring achieve better levels of compliance.

However, a score of 85% should not obscure persistent challenges. Certain areas may remain fragile, in particular, complete batch traceability in the event of a drug recall; optimal management of heat-sensitive medicines, often compromised by precarious electrical infrastructures [4];

systematic development of pharmacovigilance, which is still not fully operational in many African countries [10]. In addition, the heavy dependence on limited funding and sometimes unsuitable infrastructures could pose a threat to the sustainability of these good practices.

These results provide an encouraging basis for further strengthening pharmaceutical quality in the University Clinics of Kinshasa. In line with the EAHP (2014) recommendations.

CONCLUSION

This study of Good Hospital Pharmacy Practice at the University Clinics of Kinshasa revealed a high overall level of compliance (85%) with the international standards of the WHO, FIP, and EAHP. The results highlight notable strengths, including a structured organization, well-established written procedures, qualified staff, and the existence of an active pharmaceutical committee.

However, several shortcomings remain, including the limited traceability of pharmaceutical verification of prescriptions at the patient level and the infrequent implementation of ongoing staff training. These are priority areas for improvement to achieve optimal compliance and enhance patient safety.

Ultimately, this study provides a solid foundation for the continuous improvement of hospital pharmacy at the University Clinics of Kinshasa and serves as a reference model for other healthcare establishments in the DRC and sub-Saharan Africa. The recommended corrective actions, which include consolidating monitoring systems, strengthening continuing education, and adopting management technologies, will ensure the sustainability of good practice and the excellence of the hospital pharmacy service at the University Clinics of Kinshasa.

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CONFLICT OF INTEREST: None

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ETHICS STATEMENT: The authors confirm that ethical approval was not required for this study, as it involved only the review of hospital practices and did not include any direct patient intervention or identifiable personal data. Nevertheless, the research was conducted in accordance with ethical standards and institutional regulations.

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