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PERSPECTIVES

Strengthening Hospital Pharmacy Practice in Nepal Through the Minimum Service Standards Checklist

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Abstract: Along with the positive development in health services and facilities, hospital pharmacy practice in Nepal has also evolved. The minimum service standards (MSS) developed by the Ministry of Health and Population of Nepal act as a structured framework to assess hospitals' readiness and capacity to deliver quality health services and consist of three significant domains: governance and management standards, clinical service management standards, and support service standards. The clinical service management standards also consist of the hospital pharmacy service standards of practice checklist. This study presents a perspective review of MSS checklists and their implications for pharmacy services, where we discuss how the MSS checklist acts as a viable tool for strengthening the hospital pharmacy practice in Nepal's primary, secondary, and tertiary hospitals. Following the MSS checklist, hospital administration, hospital leaders, hospital management committee, and the hospital pharmacy and therapeutic committee can help to develop further action plans to mitigate issues, thus resulting in 100% compliance with the checklist and quality improvement. This paper can also serve as evidence or a start-up for conducting MSS-based research at the provincial and federal levels to inform hospital pharmacy-based practices among the policy-related institutions in the coming days.

Keywords: hospital pharmacy, minimum service standards, pharmacy, pharmaceutical policy, Nepal

Background

The Constitution of Nepal, Article 35 states that every citizen has the right to free basic healthcare, equal access to services, emergency care without denial, and the right to be informed about their medical treatment.[1] Sustainable Development Goals (SDGs) III also focuses on ensuring healthy lives along with the promotion of well-being for all at all ages.[2]

The National Health Policy 2019 of Nepal provides the framework for universal access to quality health services.[3] It places universal health coverage (UHC) at the center of its priorities, stressing the need for equitable access and quality healthcare services in addition to the basic health services package free of charge to all,[4,5] providing opportunities at the provincial levels.[6] Similarly, the Nepal Health Sector Strategy (NHSS) also focuses on improving the health status of all people through an accountable and equitable health service delivery system[7] where the NHSS 2015/16–2021/22 comprises four strategic principles underlying the national move toward UHC, equitable access to health services, quality health services, health system reform, and a multisectoral approach.[8]

Following the adoption of the 2015 constitution, Nepal is currently divided into seven provincial states to provide facility-level infrastructure, resources, management, general service readiness, and quality of care in the healthcare system. The country's transition into a federal form of governance with specific mandates for the local, provincial, and federal governments has provided an opportunity to reorganize the health system, devolution of power, and rational planning for establishing and upgrading health

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institutions for optimal delivery of high-quality health services.[9] Federalism fosters local government-community collaboration, optimizing resource allocation and planning based on evidence and specific needs,[10] vital to improving each level of the health system, focused on leadership and governance, service delivery, health financing, health workforce, access to essential medicines and technologies, and health information systems.[11–13]

Hospital Pharmacy Practice in Nepal

The growth of hospital pharmacy culture in the context of Nepal is mainly due to two significant guidelines, Hospital Pharmacy Service Guideline 2015[14,15] and the recently promulgated codes for sales and distribution of drugs (CSDD) 2024.[16] The Hospital Pharmacy Service Guidelines 2015 rule 3 explains the Hospital Pharmacy and Therapeutic Committee (HPTC) while rule 4 clearly states on the roles and responsibilities of the committee.[14] HPTC is involved in preparing the list of medicines for the hospital, preparing the formulary, initiating pharmacovigilance, developing standard treatment protocols, inspecting the pharmacy, and implementing ministry-level directives.[14] The implementation of these guidelines will focus on procurement procedures, the supply of medicine and medicinal substances, stock management, and the effective distribution of freely available drugs in hospital pharmacies.[14] In contrast to hospital pharmacy service guidelines 2015, CSDD was developed by the Department of Drug Administration, the National Drug Regulatory Authority of Nepal, in response to the Drug Registration Regulation, 1981 rule 11.[16] The codes have 5 chapters and 20 sections where Chapter 5 Section 17 "Good pharmacy practice or good storage and distribution practice license related provisions" explains on the process to obtain a good pharmacy practice (GPP) and good storage and distribution practice license based on several indicators as mentioned in schedule 1 and 2 respectively.[16]

As per the American Society of Health-System Pharmacy (ASHP), maintaining the standards of hospital pharmacy within the hospital is critical in providing the basic guide for the provision of hospital pharmacy services that are vital to safe, effective, and cost-conscious medication use, along with ensuring the availability, affordability, quality, and rational use of medicines in hospital settings.[17] As such, within the health care facility, implementation of hospital pharmacy service guidelines is mandatory to ensure access to health services effectively by providing accessible and quality service to patients and clients through the operation of its pharmacy service by hospitals through qualified human resources in the subject of pharmacy.[14,15,18] Another tool that can be used to identify the weaknesses and shortcomings within the hospital pharmacy setting is the minimum service standards (MSS) checklist prepared by the Ministry of Health and Population, Nepal.[19] There is still a dearth of MSS-focused pharmacy practices analyses within the country. As such, within this desk-based perspective study, we try to review and highlight the MSS checklist from the hospital pharmacy point of view, aiming to inform hospital administrators and policymakers to improve the pharmacy practice in the coming days, along with the identification of gaps and opportunities for pharmacy services. No primary data collection or statistical analysis was undertaken; however, the paper was framed as a policy and practice review supported by secondary sources (the MSS Health Post Assessment,[20] MSS Primary Hospital Assessment,[21] MSS Secondary A Hospital Assessment,[22] MSS Secondary B Hospital Assessment,[23] and the MSS Tertiary Hospital Assessment Checklists).[24] Several challenges exist for implementing a proper pharmacy practice within low-middle-income countries (LMIC), such as workforce limitations, financing, patient safety concerns, communication gaps, regulatory, educational, and training gaps.[25–28] Hence, to overcome these challenges and provide optimal pharmaceutical services, using the MSS checklist in today's context of LMIC like Nepal is rational.

Analyzing the MSS Checklist Tool

The Constitution of Nepal 2015 established a federal healthcare system by restructuring health services into three tiers, i. e. local, provincial, and federal. This framework introduced specific categories for hospitals at each level, aiming to enhance the quality, accessibility, and efficiency of healthcare delivery nationwide.[1]

The MSS tool provides a structured framework to assess hospitals' readiness and capacity to deliver quality health services.[29] These standardized tools evaluate service availability and help identify key gaps to guide quality improvement efforts.[30] MSS for hospitals reflects the optimally needed minimum criteria for services to be provided; as such, this tool outlines the equipment, supplies, furniture, and human resources required for carrying out the service. MSS tools with relevant indicators and appendices were accessed from the Department of Health Services (DOHS), Ministry of Health and Population website. MSS data, handbooks, and implementation guidelines are also available at https://msshealth.org.np. MSS assessment tools for evaluation

of several domains and hospital pharmacy components were prepared by using MSS assessment tools for the MSS Health Post Assessment Checklist,[20] MSS Primary Hospital Assessment Checklist,[21] MSS Secondary A Hospital Assessment Checklist,[22] MSS Secondary B Hospital Assessment Checklist,[23] and MSS Tertiary Hospital Assessment Checklist.[24] The assessment tools with pharmacy components were evaluated based on the number of standards and percentage weightage. The overall service standards are categorized into three major sections: governance and management, clinical, and hospital support service management.[20–24] The details of the MSS tool for identifying gaps in quality improvement evaluation in Health Facilities are presented in Table 1.

Table 1 MSS Assessment Tool to Identify Gaps in Quality Improvements Evaluation in Health Facilities

Minimum Service Standard (MSS) Assessment Tool				
Section Number	**Section Name**	**No. of Standards**	**Maximum Score**	**Weightage**
MSS Health Post Assessment				
I	Governance and Management Standard	79 (81*)	83 (85*)	20%
II	Clinical Service Management Standard	195 (196*)	229 (230*)	60%
III	Support Service Standard	85	93	20%
Total Score		359	405	
MSS Primary Hospital Assessment				
I	Governance and Management Standard	105	109	20%
II	Clinical Service Management Standard	417	519	60%
III	Support Service Standard	124	132	20%
Total Score		646	760	100%
MSS Secondary A Hospital Assessment				
I	Governance and Management Standard	105	109	20%
II	Clinical Service Management Standard	478	682	60%
III	Support Service Standard	138	148	20%
Total Score		721	939	100%
MSS Secondary B Hospital Assessment				
I	Governance and Management Standard	106	110	20%
II	Clinical Service Management Standard	828	1097	60%
III	Support Service Standard	139	149	20%
Total Score		1073	1356	100%
MSS Tertiary Hospital Assessment				
I	Governance and Management Standard	109	112	20%
II	Clinical Service Management Standard	909	1228	60%
III	Support Service Standard	147	157	20%
Total Score		1165	1497	100%

Notes: This table is prepared by taking the reference from the MSS Health Post Assessment,[20] MSS Primary Hospital Assessment,[21] MSS Secondary A Hospital Assessment,[22] MSS Secondary B Hospital Assessment,[23] MSS Tertiary Hospital Assessment[24] with respect to the number of standards, score, and weightage covered by governance and management Standard, clinical Service management standard, and hospital support service management standards. *Refers to the change in human resource management and development standards within Governance and Management Standard representing health posts with birthing centers.

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Within the primary hospital MSS checklist, there are 646 sets of standards with an average score of 760 (Table 1). Among these, the hospital pharmacy service is included under section II, Clinical service management of standard code 2.5, which has 19 components, 36 sets of standards, and a score of 40.[21] Similarly, the MSS assessment tool to identify gaps in the quality improvement evaluation of the hospital pharmacy core components is included in Table 2.

Secondary A Hospital has 721 standards with an average score of 939 (Table 1). Within these, the hospital pharmacy service falls under Section II: Clinical Service Management, specifically under standard code 2.5. This section includes 19 components and 35 standards, with a total score of 39 (**Table 2**).[22] Similarly, Secondary B Hospital has a total of 1,073 standards, achieving an average score of 1,356 (Table 1). The hospital pharmacy service, again under Section II: Clinical Service Management (standard code 2.5), includes 19 components and 36 standards, with a score of 40 (Table 2).[23]

Lastly, the Tertiary Hospital has 1,165 standards with a total score of 1,497 (Table 1). These are distributed as follows: 109 standards for Governance and Management (score: 112, weight: 20%), 909 standards for Clinical Service Management (score: 1,228, weight: 60%), and 147 standards for Support Service Management (score: 157, weight: 20%). The hospital pharmacy service is included under Clinical Service Management (Section II, standard code 2.5), consisting of 19 components and 39 standards, with a score of 43 (Table 2).[24] There is an increasing order of standards from Secondary Hospital to Tertiary Hospitals. In contrast, the components outlined in the hospital pharmacy services within the clinical services management standards of Health Post are different from those of the components mentioned in other higher health facilities. The higher standards also help to improve perceived structure and outcomes in tertiary care settings. Collaborative efforts from hospital team members regarding the implementation of MSS standards also lead to fair access to services for people, while the service quality also improves.[31] Components under different health facilities, as outlined in the Clinical Services Management Standards of MSS Checklist, are listed in Table 3.

Table 2 MSS Assessment Tool to Identify Gaps in Quality Improvements Evaluation of Hospital Pharmacy

Minimum Service Standard (MSS) Assessment for Hospital Pharmacy					
Section Number	**Section Name**	**Standard Code**	**Component**	**No. of Standards**	**Maximum Score**
MSS_Health Post Assessment					
II	Clinical Services Management Standard	2.4 Dispensary Services	12	23 (24)*	23
MSS_Primary Hospital Pharmacy Assessment					
II	Clinical Service Management Standard	2.5 Hospital Pharmacy Service	19	36	40
MSS_Secondary A Hospital Pharmacy Assessment					
II	Clinical Service Management Standard	2.5 Hospital Pharmacy Service	19	35	39
MSS_Secondary B Hospital Pharmacy Assessment					
II	Clinical Service Management Standard	2.5 Hospital Pharmacy Service	19	36	40
MSS_Tertiary Hospital Pharmacy Assessment					
II	Clinical Service Management Standard	2.5 Hospital Pharmacy Service	19	39	43

Notes: This table is prepared by taking the reference from the MSS Health Post Assessment,[20] MSS Primary Hospital Assessment,[21] MSS Secondary A Hospital Assessment,[22] MSS Secondary B Hospital Assessment,[23] MSS Tertiary Hospital Assessment[24] with respect to the number of standards, score, and weightage covered clinical Service management standard.] (*Refers to the Malaria endemic districts).

Table 3 Components Under Different Health Facilities as Outlined in the Clinical Services Management Standards of MSS Checklist

Health Post (12 Components)	**Primary (19 Components)**	**Secondary A Hospital (19 Components)**	**Secondary B Hospital (19 Components)**	**Tertiary Hospital (19 Components)**
Dispensary service available	Pharmacy Unit Available	Pharmacy unit available	Pharmacy department available	Pharmacy department available
National drug formulary available	Governance committee for hospital pharmacy services	Governance committee for hospital pharmacy services	Governance Committee for hospital pharmacy services	Governance committee for hospital pharmacy services
Dispensary service hours	Hospital formulary Heading: Availability of medicines and supplies	Hospital formulary Heading: Availability of medicines and supplies	Hospital formulary	Hospital formulary Heading: Availability of medicines and supplies
Staffing	Good Procurement Practice	Good procurement practice	Good procurement practice	Good procurement Practice
Essential free medicines available	Pharmacy Service Hours	Pharmacy service hours	Pharmacy service hours	Pharmacy service Hours
Availability of medicines and supplies for programs	Staffing as per hospital pharmacy service guideline 2072	Staffing as per hospital pharmacy service guideline 2072	Staffing as per hospital pharmacy service guideline 2072	Staffing as per hospital pharmacy service guideline 2072
Display and storage of medicines	Display of list of free medicines	Display of list of free medicines	Display of list of free medicines	Display of list of free medicines
Prescription and dispensing of medicines	Availability of medicines for specific programs	Availability of medicines for specific programs	Availability of medicines for specific programs	Availability of medicines for specific programs
Availability and use of STP	Inpatient pharmacy services available	Inpatient Pharmacy services available	Inpatient pharmacy services available	Inpatient pharmacy services available
First Expiry First Out (FEFO)	Electronic record-keeping	Electronic record-keeping	Electronic record keeping	Electronic record Keeping
Dispensary Inventory	Pharmacy stock available	Pharmacy stock available	Pharmacy stock available	Pharmacy stock Available
Pharmaceutical Waste management	Display and storage of medicines	Display and storage of medicines	Display and storage of medicines	Display and storage of medicines
–	Information to patients	Information to patients	Information to patients	Information to Patients
–	Generic Prescription	Generic prescription	Generic prescription	Generic prescription
–	Dispensing Medicines	Dispensing medicines	Dispensing medicines	Dispensing medicines
–	First Expiry First Out (FEFO)	First In First Out (FIFO)	First Expiry First Out (FEFO)	First Expiry First Out (FEFO)
–	Pharmacy Inventory	Pharmacy Inventory	Pharmacy Inventory	Pharmacy Inventory
–	Drug utilization review and quantification of data	Drug utilization review and quantification of data	Drug utilization review and quantification of data	Drug utilization review and quantification of data
–	Pharmaceutical waste disposal	Pharmaceutical waste disposal	Pharmaceutical waste disposal	Pharmaceutical waste disposal

Notes: This table is prepared by taking the reference from the MSS Health Post Assessment,[20] MSS Primary Hospital Assessment,[21] MSS Secondary A Hospital Assessment,[22] MSS Secondary B Hospital Assessment,[23] MSS Tertiary Hospital Assessment,[24] for Hospital Pharmacy Service components under Clinical Services Management Standard.

Discussion

MSS checklist can be a worthy tool for improving the hospital's settings and fulfilling basic requirements.[19] This checklist acts as a quantitative tool such that the overall MSS score reflects the minimum optimal readiness of hospitals to deliver services. Scores below 50% (White color coded) indicate poor performance needing urgent action; 50–69% (Yellow color coded) show improving status requiring targeted support; 70–84% (Blue color coded) indicates acceptable readiness needing specific interventions; and 85% (Green color coded) or above reflects optimal readiness, requiring sustained efforts to reach 100%.[20–24] Information obtained from the color grading allows hospital administration and the responsible authorities to focus on preparing a further action plan that would help in leading to full compliance. Proper collaboration between the hospital directors, hospital management committee, and HPTC can help adhere to the MSS and strengthen the hospital pharmacy practice by developing an action plan (Figure 1).

Almost all health facilities had a Governance committee for hospital pharmacy services and formulary services that must adhere to the MSS checklist components. HPTC acts as the vital committee for hospital pharmacies in Nepal, and the committee's functions are variable.[14] This committee can act as a potent medium for adhering to the MSS checklist within the hospital pharmacy. We initiated the drug information unit and pharmacovigilance cell under the hospital pharmacy section, adhering to the MSS checklist and improving pharmacy quality.[15] Almost all health facilities included a hospital formulary or a formulary context. In the case of Nepal, the Nepalese National Formulary (NNF) is the national formulary book that provides information related to drugs, including their dosage forms, strength, indications, contra-indications, adverse effects, and miscellaneous information.[32] However, unlike health posts, all other health facilities are expected to prepare their hospital formulary. For example, the standard number 2.5.3.1 (component 2.5.3 Hospital formulary) of Secondary Class B hospital, on its hospital pharmacy service checklist, explains that if only the "Hospital

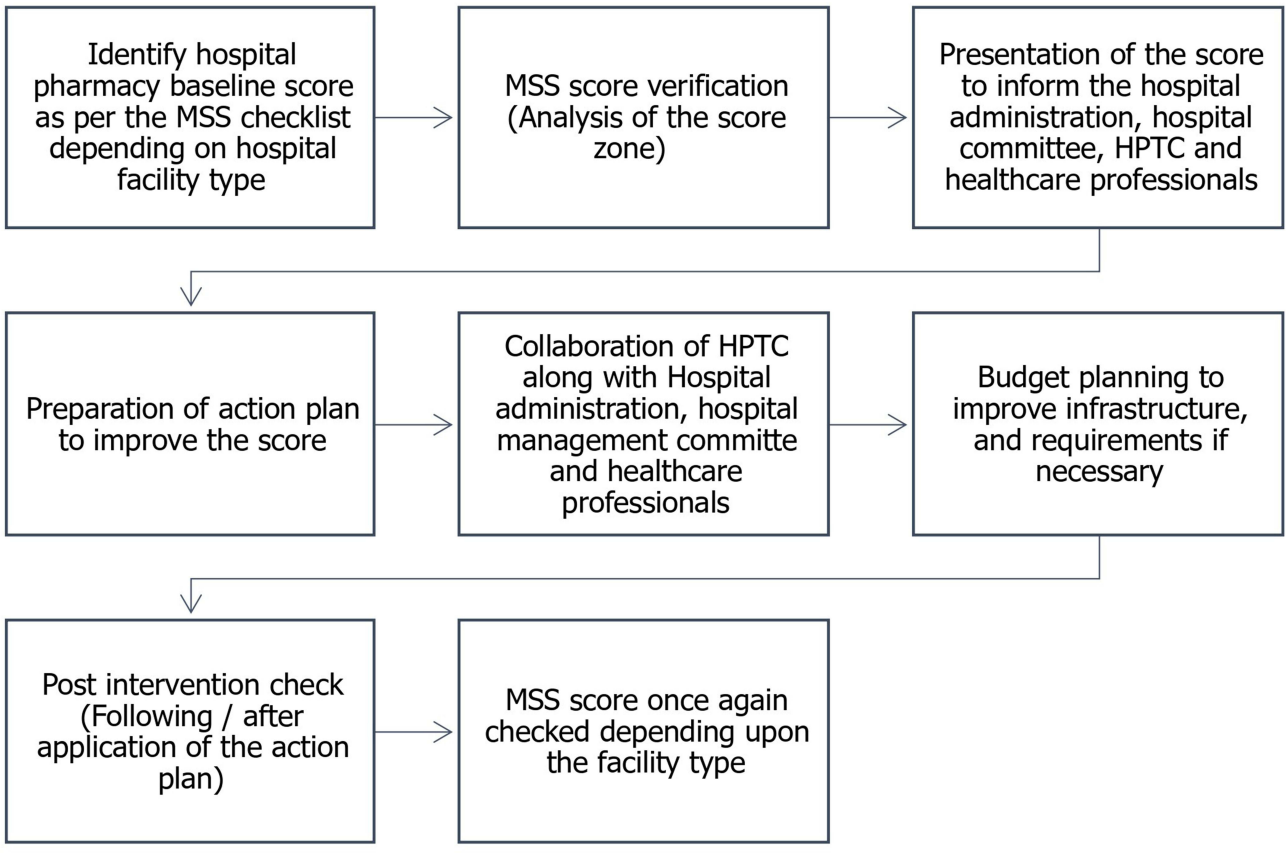

Figure 1 Use of Minimum Service Standards and its prospects with further interventions This figure shows the flow process in which the MSS checklist is used to prepare an action plan with a special focus on hospital pharmacy practice where the major role of Hospital Pharmacy and Therapeutic Committee comes into play.
Abbreviations: MSS, Minimum Service Standards; HPTC, Hospital Pharmacy and Therapeutic Committee.

has hospital formulary based on NNF approved by DTC" then it'd be awarded a one (1) point.[23] It is noteworthy that these formularies are directed to be prepared only when HPTC approves to prepare them through a rigorous meeting, including discussion with consultant doctors, and the chief medical director. The formulary of the hospital should be strictly based on the NNF prepared by the Nepal government for standardization. Hence, only those formularies prepared with compliance from NNF and HPTC are considered for inclusion in MSS scoring. However, several challenges exist for preparing formularies in the Nepalese hospital context due to a lack of cooperation, not feeling the need for the standard book, lack of time, and poor recognition for the work. The checklist also provides room for opportunity to conduct research-related activities through drug utilization studies and quantification of data. Getting information on the drug utilization studies using the World Health Organization tool[33] would help inform prescribing and patient care indicators, and provide strategic interventions for prescribers and healthcare professionals in promoting rational use of drugs. With the inclusion of GPP indicators in the CSDD rules,[16] this can also act as a medium for promoting MSS and overall hospital pharmacy performance in the Nepalese context.

This finding of effectively implementing the MSS tool for better outcome of health services can also be seen from examples where a previously conducted study in Nepal found that the MSS tool and hospital strengthening program was able to guide the hospitals toward excellence, leading to significant service improvements since 2014, including increases in laboratory investigations (+46%), cesarean deliveries (+40%), and spinal anesthesia (+32).[19]

The MSS components analysis gives a clear baseline picture of hospital pharmacy services associated with the availability and readiness of quality health services. Similarly, a systematic review showed that MSS tool implementation in the health sector improved each trimester but failed to meet the annual 100% target. This reflects suboptimal execution, which may hinder health service delivery and impact societal welfare due to limited human resources, inadequate infrastructure, weak cross-sectoral and community support, and ineffective planning and budgeting systems.[34] Along with these, barriers such as budget, attitude of implementers, and effective communication also exist that might halt a proper MSS compliance[35,36] thus underscoring a need for proper coordination between implementers, policy-makers, and ministry-level officials to provide optimal healthcare services.

Comparing with the ASHP Guidelines: Minimum Standard for Pharmacies in Hospitals,[17] the MSS checklist for hospital pharmacies from Nepal still lacks concepts such as compounding of medications, medication therapy management and its optimization, effectiveness of medication use system, and focus on clinical research. This opens up room for opportunities for several domains to be incorporated within the checklist. However, for the execution to succeed, pharmacy professionals, university, policy makers and ministry officials must collaborate. Using MSS checklist and other pharmaceutical tools, such as CSDD 2024, hospital pharmacy service guideline 2015 would help fulfil GPP standards.

Conclusion

With the increment in the development of health-related indicators in Nepal, hospital pharmacy services are also progressing. The Ministry of Health and Population of Nepal has prepared an MSS checklist to ensure the services are optimal and of quality, which also covers the hospital pharmacy services under the Clinical Service Management Standard. Analyzing the components of hospital pharmacy service based on health facilities would help provide a baseline picture. This would ultimately help prepare an action plan to further strengthen the service by conquering the weaknesses. However, a coordinated approach from the hospital administration, hospital management committee, MSS implementers, and HPTC is required for full compliance with the MSS. Robust MSS compliance can help inform national monitoring, expedite the accreditation process, and strengthen fund acquisition to strengthen weak areas. Training and seminars regarding MSS compliance for pharmacists are required at different time intervals, as these help to update and prepare them with the components of hospital pharmacy mentioned in the MSS tools. Since the majority of the contents of MSS for hospital pharmacy deals with hospital formulary, strategies to overcome barriers in formulary preparation, workforce shortages, or compliance challenges could be handled through proper coordination between HPTC, medical directors, and consultant doctors within the hospital. The pharmacist, the chief secretary of HPTC, could take a principal step in communicating with all the consultant doctors in realizing the importance of formulary and help adhere to the checklist outlined in MSS. This study also acts as evidence for conducting hospital pharmacy-focused MSS-related research and policy for hospitals in Nepal in the coming days.

Disclosure

The authors report no conflicts of interest in this work.

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