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RESEARCH LETTER

Prescription practices in the outpatient department of Bangladesh Medical University: A clinical audit

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Ethical approval
Ethical approval was not required as the clinical audit was done solely on outdoor prescriptions, and the patient did not provide any data. We have taken permission from the authority of BMU hospital before conducting the clinical audit. All data were handled confidentially, and patient identifiers were removed prior to analysis.

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Rational prescribing is a cornerstone of safe, effective clinical care. A complete prescription encodes patient identity, diagnostic reasoning, therapeutic decision-making, and continuity-of-care planning errors at any of these junctures, thereby threatening patient safety and escalating healthcare costs [1]. In outpatient departments (OPDs) of low- and middle-income countries (LMICs), prescribing deficiencies are compounded by high patient volumes, limited resources, and inconsistent use of clinical guidelines [2]. Bangladesh, a lower-middle-income country with a predominantly paper-based prescribing system, faces pronounced challenges: studies in Dhaka's hospitals have documented high rates of polypharmacy and omission errors in both government and private facilities [3]. Clinical audit - the systematic comparison of current practice against agreed standards is a proven quality improvement strategy endorsed by the WHO and the UK National Institute for Health and Care Excellence (NICE) [4]. Repeated audit–feedback cycles have demonstrated sustained improvements in prescription completeness and rational drug use even in resource-constrained LMIC settings [5]. Bangladesh Medical University (BMU) is the country's premier postgraduate medical institution; yet, no structured prescription audit had previously been conducted in its OPD. The objective of this audit was to identify gaps, benchmark compliance, and inform targeted interventions.

A cross-sectional clinical audit was conducted on 546 conveniently sampled outpatient prescriptions written between October and December 2025 at the OPD-1 and OPD-2 pharmacies of BMU. Duplicate prescriptions were excluded. A 20-item structured audit tool was developed by reviewing national standards (DGDA and BMDC), BMU's own OPD prescription format, the WHO Guide to Good Prescribing, and NICE Medicines Optimisation guidelines [4]. Indicators were grouped into six domains: (i) patient demographics and identification, (ii) clinical documentation, (iii) diagnosis and therapeutic rationale, (iv) continuity of care and communication, (v) prescription legality and clarity and (vi) malpractice. Pre-defined compliance benchmarks were ≥90% for administrative parameters and ≥80% for core clinical parameters, consistent with published quality-assurance literature [6]. Two trained independent reviewers assessed each prescription, and disagreements were resolved by discussion and referral to a third senior reviewer. Descriptive statistics (frequencies and percentages) were computed using Microsoft Excel 365. Institutional permission was obtained on 14 September 2026.

Administrative parameters were well documented: patient age (97.1%), prescription date (97.3%), registration number (96.2%), and prescribing department (96.3%) all exceeded the 90% benchmark. By contrast, critical demographic

Key messages

Accurate and complete prescription writing is essential for patient safety, continuity of care, and rational prescribing. Fewer than half of prescriptions from outpatients at Bangladesh Medical University Hospital met the required standards, highlighting a major gap in documentation. By introducing an electronic outpatient prescription system, implementing evidence-based prescription training, and conducting periodic evaluations, Bangladesh Medical University can improve prescription quality.

Table 1 Compliance with clinical audit standards for outpatient prescriptions (n=546)

Clinical audit standards	Number (%)
Patient demographics and identification	
Registration number present	525 (96.2)
Patient's full name written	530 (97.1)
Date of prescription recorded	531 (97.3)
Patient's address mentioned	11 (2)
National Identification Number present	5 (0.9)
Patient's age documented	530 (97.1)
Patient's sex documented	50 (9.2)
Mobile phone number provided	16 (2.9)
Clinical documentation	
Department specified	526 (96.3)
Medical history included	372 (68.1)
Physical examination findings recorded	113 (20.7)
Laboratory investigations documented	372 (68.1)
Diagnosis and therapeutic rationale	
Diagnosis documented	232 (42.5)
Treatment prescribed according to diagnosis	227 (41.6)
Evidence-based treatment given (guideline or literature supported)	200 (36.6)
Continuity of care and communication	
Follow-up plan clearly documented	99 (18.1)
Advice written in prescription	208 (38.1)
Prescription legality and clarity	
Handwriting is easy to understand	465 (85.2)
Signature of doctor documented	459 (84.1)
Malpractice	
Any unregistered/herbal/Unani/Ayurvedic drugs prescribed	10 (1.8)

identifiers showed alarming deficiencies: patients' sex was recorded in only 9.2% of prescriptions, addresses in 2.0%, mobile numbers in 2.9%, and National IDs in 0.9%. Sex is a key biological determinant of pharmacokinetics and adverse drug reaction risk [7] its omission undermines personalised and safe prescribing.

Core clinical documentation was substantially below target. A clear diagnosis was documented in only 42.5% of prescriptions, well below the 80% benchmark, and evidence-based treatment was recorded in just 36.6%. Treatment concordance with diagnosis was present in 41.6%, physical examination findings in 20.7%, and follow-up plans in only 18.1%. Medical history and laboratory investigations were moderately documented (68.1%). Written patient advice appeared in 38.1% of prescriptions. Legibility of handwriting was satisfactory (85.2%), and doctors' signatures were present in 84.1% of cases, but the prescriber's name and designation, essential for accountability, were recorded in only 21.1% of cases. Prescription of unregistered, herbal, or Ayurvedic medicines occurred in 1.8% of cases.

This audit reveals a paradox common to many LMIC OPDs. Robust administrative record-keeping coexists with critically deficient clinical documentation. The near-universal recording of age, date, and registration number reflects a well-embedded administrative culture, yet the failure to document diagnosis in more than half of prescriptions is a fundamental lapse. Diagnosis is the anchor of rational therapy; without it, the appropriateness of prescribed medications cannot be verified, monitored, or audited [1]. This gap is mirrored in findings from comparable Bangladesh hospitals, where prescription omission errors, particularly for diagnosis and indication, were prevalent across both government and private OPDs [3].

The low rate of evidence-based prescribing (36.6%) suggests that clinical decisions at BMU OPD may be influenced by habit, pharmaceutical promotion, or patient demand rather than current evidence, a pattern documented across South Asian and sub-Saharan LMICs [2]. This concern is reinforced by the treatment–diagnosis concordance rate of 41.6%, implying potential misalignment between recorded diagnoses and therapeutic choices.

The near-absence of follow-up plans (18.1%) and patient advice (38.1%) reflects an episodic, consultation-centred model of care ill-suited to the management of chronic non-communicable diseases, which constitute an increasing share of Bangladesh's disease burden. Continuity of care is a validated predictor of improved clinical outcomes and reduced hospital re-admission [8]. Equally concerning is the poor documentation of prescriber identity (21.1%), which weakens professional accountability and hinders inter-provider communication.

Three evidence-informed interventions are recommended. First, a structured mandatory OPD prescription form with dedicated fields for patient sex, diagnosis (including ICD code), evidence-based reference, follow-up instruction, and prescriber name and designation should be introduced, with a carbon-copy duplicate retained in the patient record. Second, regular interactive prescriber training, anchored in audit data and case-based learning, should be implemented; studies in Pakistan and Sudan demonstrate that educational cycles improve prescription quality across successive audit rounds [9]. Third, an electronic OPD prescribing system should be explored as a long-term solution: e-prescribing has been shown to reduce omission errors and improve prescribing safety in both high-income and LMIC settings [10]. Institutionalised quarterly prescription audits with constructive feedback to clinicians are essential to embed a culture of continuous quality improvement.

This study has notable strengths, including a comprehensive 20-item, multi-domain audit tool and

benchmarks anchored in national and international standards. Limitations include a reliance on documented rather than verbally communicated information; clinical appropriateness of individual prescriptions was not assessed. In cases where no diagnosis was documented, the appropriateness of the treatment could not be fully verified from the prescription alone. Two OPD departments might not represent all the outpatient services at BMU.

This clinical audit at BMU OPD identified critical deficiencies in diagnosis documentation, evidence-based prescribing, and follow-up planning, against a backdrop of strong administrative compliance. These findings highlight an urgent need for structured prescription reform, prescriber education, and institutionalised rigorous audit to improve prescribing quality and patient care at BMU.

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Manuscript drafting and revising it critically: KAA, SA, MAKA, KMM, AAF, MHHS, TN. *Approval of the final version of the manuscript:* KAA, SA, MAKA, KMM, AAF, MHHS, TN. *Guarantor of accuracy and integrity of the work:* KAA, SA, MAKA, KMM, AAF, MHHS, TN.

Conflict of interest

We do not have any conflict of interest.

Data availability statement

Data supporting the findings are available from the corresponding author upon reasonable request.

AI disclosure

We acknowledge the use of Grammarly AI to assist with English language editing, improving sentence structure, grammar and vocabulary for greater clarity. We critically reviewed and revised all generated suggestions to ensure the manuscript's readability. We take full responsibility for the content of this article.

Supplementary file

The BMU OPD prescription format may be obtained from the corresponding author.

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