

Building Trust in Healthcare with **UPMSCL Drug Quality Assurance System**

2026

Introduction

Over the years, the Government of Uttar Pradesh (GoUP) has taken significant initiatives to strengthen its healthcare delivery mechanisms, with drug quality assurance emerging as a critical focus area to ensure better treatment outcomes and reinforce public confidence in the healthcare system.

However, the issue of substandard and counterfeit drugs has remained a major concern across the country. The National Drug Survey (2014–2016) highlighted that nearly 3.16% of drugs from retail outlets and 10.02% from government supply chains in India were not of standard quality (NSQ), with Uttar Pradesh among the states reporting higher NSQ rates [1]. Such findings underscored the need for a robust mechanism to ensure that only high-quality medicines reach patients.

Recognising the importance of strengthening drug quality assurance, GoUP established the Uttar Pradesh Medical Supplies Corporation Limited (UPMSCL) as a centralised agency for the procurement and distribution of medicines and medical supplies. UPMSCL has established a structured quality assurance system encompassing standardised quality checks, NABL-accredited laboratory testing, batch-wise monitoring, digital tracking, and mechanisms for managing Not of Standard Quality (NSQ) drugs. The Uttar Pradesh Technical Support Unit (UPTSU), a programme of India Health Action Trust (IHAT), has provided technical support to the Government of Uttar Pradesh and UPMSCL in strengthening drug quality assurance processes and systems. This knowledge brief highlights the evolution of UPMSCL's drug quality assurance system.

Figure 1: Drug Quality Roadblocks in Uttar Pradesh (Pre-UPMSCL)

Decentralised and Reactive Drug Quality Control under CMSD



In the earlier Central Medical Store Depot (CMSD) system, drug quality checks relied largely on supplier declarations and post-distribution quality monitoring. Suppliers delivered drugs directly to districts along with a Self Declared Quality Report, which functioned as a self-declaration of compliance with quality standards. Independent quality verification was not routinely conducted before distribution to healthcare facilities, and the system depended on supplier adherence rather than objective testing.

Quality monitoring was undertaken after distribution, when the Food and Drug Administration (FDA) at the district level conducted random sampling of drug batches and sent samples to government laboratories. Given the available laboratory capacity, only a proportion of drug batches could be tested. Where samples did not meet quality standards, recalls were initiated. However, the decentralised and largely reactive nature of the process presented challenges related to sampling coverage, timely identification of quality issues, and the logistics of recalling affected batches. These operational challenges highlighted the need for a more preventive, centralised, and systematic approach to drug quality assurance.

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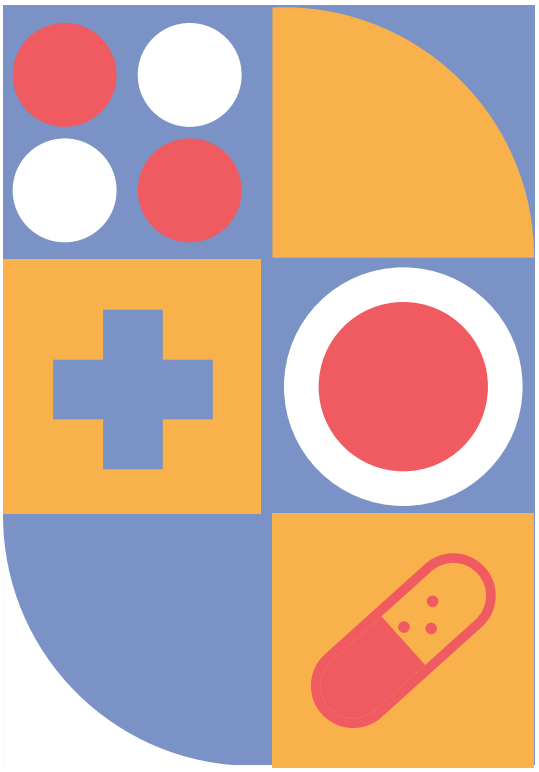
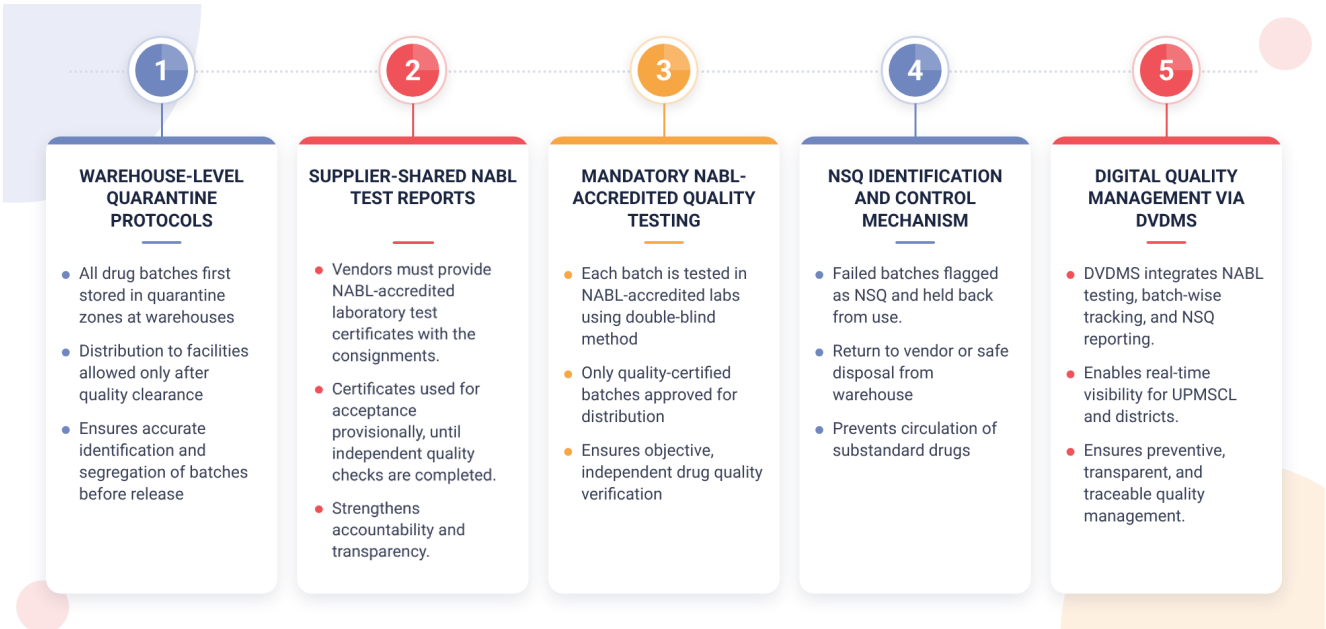


PREVENTIVE AND CENTRALISED UPMSCL'S DRUG QUALITY ASSURANCE MODEL

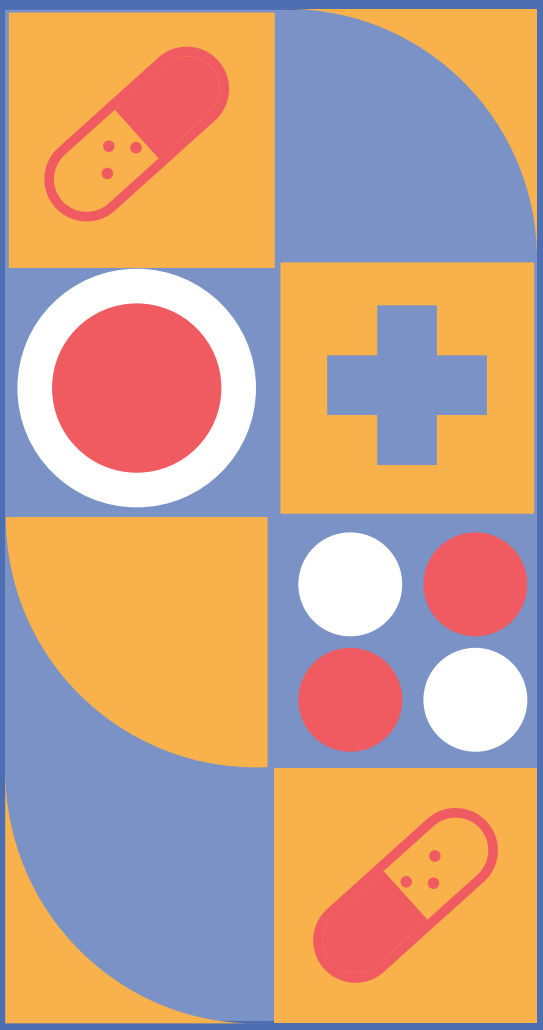
The Uttar Pradesh Medical Supplies Corporation Limited (UPMSCL) has established a preventive quality assurance mechanism to address the gaps in the earlier quality assurance model. All drug batches supplied by vendors are first stored in dedicated quarantine zones at warehouses and are released for distribution only after mandatory quality testing at NABL-accredited laboratories. Medicines are therefore released for distribution to healthcare facilities only after prior quality clearance, strengthening assurance that quality-tested medicines enter the supply chain. In addition, the FDA conducts simultaneous testing, providing an additional layer of independent verification.

A key reform supporting this system is the Quality Assurance Module within the Drugs and Vaccine Distribution Management System (DVDMS), rolled out state-wide in 2019. Originally launched in 2017 for centralised procurement, DVDMS was upgraded to integrate NABL-accredited laboratory testing, batch-wise quality tracking, real-time reporting Not of Standard Quality drugs, and a structured recall mechanism. The module also facilitates the condemnation and safe disposal of expired and NSQ drugs. Together, these measures ensure consistent quality monitoring, traceability, and a fully preventive approach to drug quality assurance.

Figure 2: UPMSCL's Preventive Drug Quality Assurance Framework



THE UPMSCL'S DRUG QUALITY ASSURANCE PROCESS



Receipt and Initial Handling

The quality assurance process begins with the receipt of procured drug batches at district warehouses across all 75 districts in Uttar Pradesh. Upon arrival, these batches are marked as "quarantine drugs" and are stored in the dedicated quarantine area of the warehouse. Within 48 hours of generating the Material Receipt Certificate (MRC), batches must be sent to the Quality Department at Headquarter Lucknow, Uttar Pradesh. Initially, the absence of a structured mechanism for transporting samples from warehouses to HQ caused delays. To resolve this, UPMSCL partnered with a dedicated transportation agency to ensure timely dispatch with real-time tracking, improving accountability and efficiency.

Operations at Quality Headquarters

Upon arrival at the Quality Department at HQ Lucknow, samples are logged in DVDMS. The samples are segregated based on district warehouse, Drugs, and storage conditions. The final stage involves secure packaging and dispatch, ensuring that the samples reach the designated laboratories without contamination or tampering.

Some of the operational challenges, such as misplaced samples, processing delays, and accountability gaps, were addressed by:

- Installing labelled racks and implementing a chronological, batch-wise arrangement for samples.
- Dedicated staff members with the responsibility of overseeing the 75 district warehouses and tasked with ensuring proper blinding and processing of samples from their respective districts.
- UPMSCL introduced a "3-Sample or 7-Day Rule", whereby samples are sent to empaneled laboratories upon receipt from three warehouses or after seven days from receipt of the first sample, whichever is earlier, ensuring timely testing and reducing processing delays.

Double Blinding Process

The UPMSCL has implemented a double-blinding mechanism, ensuring that no party involved in testing can trace the sample back to its source.

- **First Blinding at HQ:** When samples arrive from district warehouses, DVDMS randomly selects one for testing. HQ staff conceal all identifiers, such as warehouse origin and batch number, and DVDMS assigns a unique code.
- **Second Blinding through DVDMS:** After blinding, DVDMS identifies eligible laboratories and randomly assigns the coded sample to one of the empanelled NABL-accredited laboratories. UPMSCL also remains unaware of the warehouse or batch being tested, ensuring complete neutrality and objectivity in the quality assessment process.

Laboratory Testing

Once drug samples reach the designated laboratories, they undergo quality testing within defined timelines: 10 days for tablets and capsules, and 21 days for liquid formulations, including injections. Tests include potency, dissolution, sterility, stability, and contamination checks as per pharmacopoeia standards, with results uploaded to the DVDMS portal for transparency. Batches failing initial tests are retested from another two different labs. If confirmed as NSQ, they are removed from the Stock, ensuring only safe, quality medicines are distributed in Uttar Pradesh.

Monitoring and Tracking

The UPMSCL follows a stage-wise monitoring system to track drug samples throughout the quality testing cycle, with DVDMS providing real-time status. Stage-wise monitoring of the quality control process at UPMSCL takes place across the following stages:

Figure 3: UPMSCL Quality Monitoring & Tracking Process

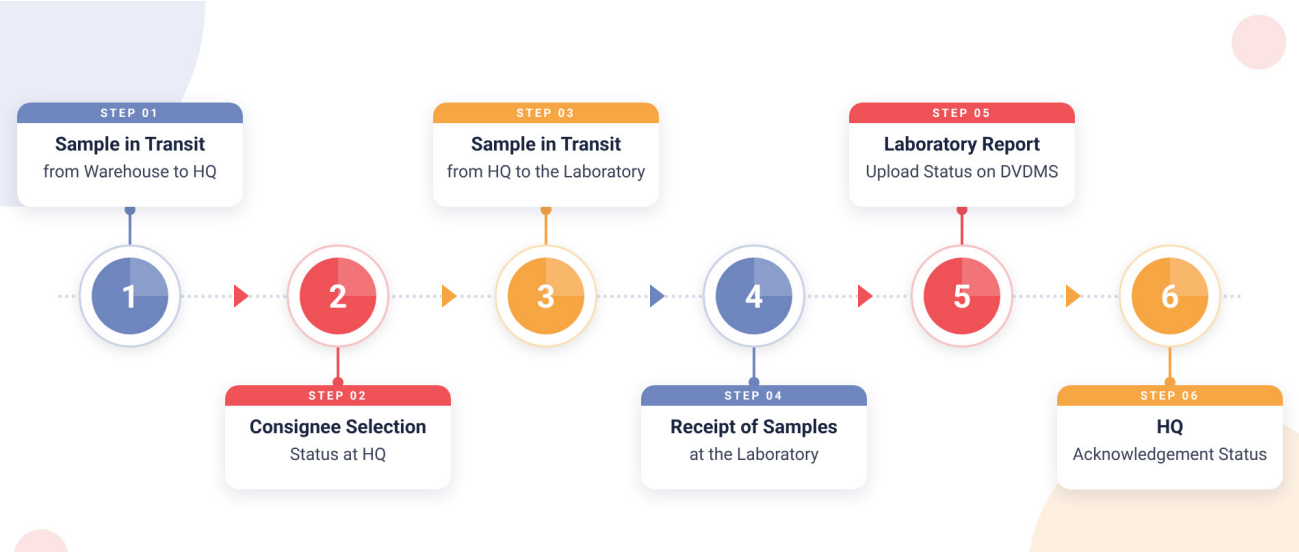
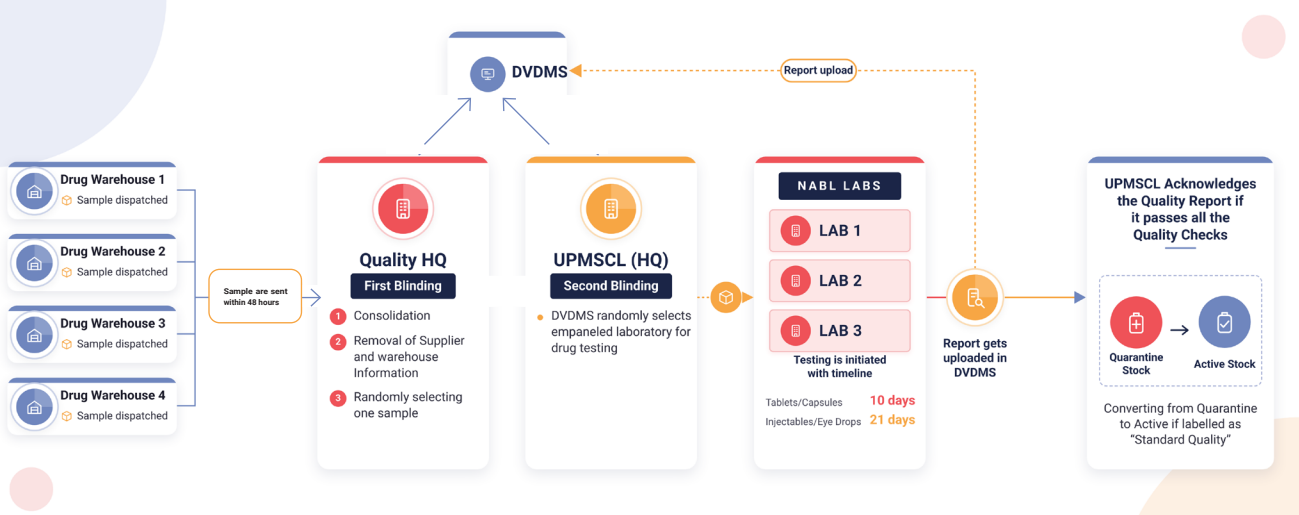


Figure 4: Workflow for Drug Quality Assurance Process in Uttar Pradesh

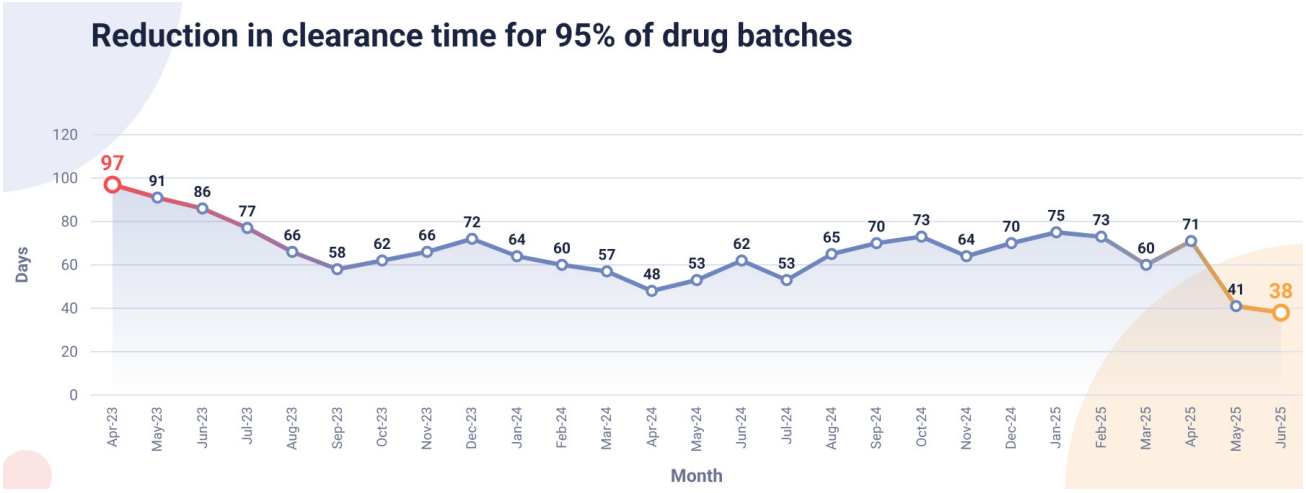


PROGRESS AND OUTCOMES

The UPMSCL processes an average of 8,000 drug batches per month for quality testing. In April 2023, only 13% of batches were cleared within a month, while the remaining batches took upto seven months to be tested and cleared. For 95% of batches, clearance took more than three months. To improve the efficiency of quality process, UPMSCL, with UP TSU's technical support, initiated stage-wise monitoring of quality batches, ensuring active involvement of District Warehouses, HQ, NABL laboratories, and the transportation. Regular DVDMS reviews and performance meetings further strengthened coordination in the quality control process.

Turnaround Time Improvement: These measures led to steady progress. By April 2024, clearance time for 95% of batches had dropped to 48 days, nearly half the initial delay. The improvement continued in the following months, with clearance time reaching just 38 days by June 2025. This turnaround is clearly reflected in the monthly clearance trend graph, Figure 5.

Figure 5: Trend of Quality Clearance of Drug Batches (Apr 2023 – Jun 2025)



Conclusion

The reforms introduced by UPMSCL, under the continued guidance of the Government of Uttar Pradesh, have fundamentally transformed drug quality assurance in Uttar Pradesh, moving from a decentralised drug quality testing model, a reactive model, to a preventive, structured, and technology-driven system. By institutionalising NABL-accredited testing, implementing the double-blind method, and strengthening monitoring through DVDMS, the UPMSCL has significantly reduced delays, eliminated batch backlogs, and ensured that only safe and effective medicines reach patients. The marked reduction in quality sample clearance timelines, from 97 days to just 38 days for 95% of the batches, has been one of the key factors in improving safe drug availability at public health facilities. Going forward, the UPMSCL model stands as a replicable example for other states, demonstrating how resilient quality assurance mechanisms can safeguard public health, improve service delivery, and reinforce the integrity of government drug procurement systems.

[1] National Institute of Biologicals. (2017). National Drug Survey (2014-2016). Ministry of Health & Family Welfare, Government of India.

[2] Uttar Pradesh Medical Supplies Corporation Limited: An Overview Note. Uttar Pradesh Technical Support Unit (UPTSU), India Health Action Trust. https://www.ihat.in/wp-content/uploads/2025/03/UPMSC.pdf

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