

Original Article

Challenges in medicine procurement through GeM in a tertiary care hospital in northeast India

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Background & objectives: The procurement of medical items (drugs and consumables) through the Government e-marketplace (GeM) is a recent initiative. This study aimed to comprehensively assess the bottlenecks, procedural pitfalls, and delays impacting the supply chain in the procurement process of a tertiary care hospital in northeast India.

Methods: A retrospective analysis was conducted on the procurement data obtained from the hospital's procurement cell over 12 months. The study primarily focused on the total demand for medicines and consumables through the e-portal and compared it with the actual quantity/quality received by healthcare facilities.

Results: The initial demand was placed for 1507 medicines and 1219 medical consumables. However, the healthcare facility received only 695 (46.1%) medicines and 945 (77.5%) consumables. Major bottlenecks identified were non-quotation of medicines, price negotiation rejections, and vendor failure to supply.

Interpretation & conclusions: This study identifies a few bottlenecks: non-quotation by vendors, price negotiation rejections and failure to supply medicines and consumables by the vendors in procurement through the GeM. Efforts like flexibility in matching previous purchase rates, International Organisation for Standardisation/World Health Organization (ISO/WHO) qualified vendor base at the GeM level and porting in reliable pharmaceutical companies must be directed towards optimising procurement processes and enhancing supply chain management to bridge the identified gaps and promote seamless healthcare delivery.

Key words Consumables - e-procurement - GeM - healthcare delivery - medicines - public procurement

Procuring medical items through the Government e-Marketplace (GeM) in India has emerged as a pivotal initiative and a prominent avenue for streamlined procurement processes in the healthcare sector. The government of India launched GeM in

2016 as a digital marketplace providing a unified platform for the procurement of goods and services by various government organizations, including medicines and pharmaceutical products¹. GeM aims to streamline the procurement process, enhance

transparency, and promote cost-effectiveness in healthcare.

Through GeM, buyers can access a wide range of pharmaceutical products, compare prices, specifications, and quality standards, and make informed procurement decisions. The platform also facilitates vendor registration, catalogue management, and e-payment mechanisms, streamlining the procurement process and reducing administrative burdens for both buyers and suppliers. Furthermore, GeM incorporates several features to enhance the procurement experience and ensure compliance with regulatory requirements².

The utilisation of e-procurement mechanisms, such as GeM, has the potential to enhance transparency and optimise the procurement process, thereby contributing to the efficient acquisition of medicines and pharmaceuticals for public healthcare facilities³. Furthermore, the adoption of e-procurement systems, including GeM, plays a crucial role in promoting the availability of generic medicines and essential pharmaceuticals, aligning with the government's efforts to ensure widespread access to safe and effective medications across urban and rural areas⁴.

However, challenges such as supplier capacity, quality assurance, and adoption barriers need to be addressed to realise GeM's full potential. Mackey *et al*⁵ identified slow adoption rates, the need to justify cost-savings, and the establishment of technical standards as key challenges for the current and future utilisation of e-procurement systems.

The procurement of medical items, especially medicines, through the GeM started in April 2023 in our tertiary care hospital. As the hospital has navigated its procurement journey through GeM over the past year, several challenges emerged that require careful consideration and resolution. Efficient procurement of medicines is a pivotal component in ensuring adequate healthcare delivery. There is a need to evaluate the efficacy of public procurement of medical items through GeM in meeting the demands of healthcare institutions. This study aims to assess the public procurement of medicines from an e-portal, focusing on the total demand versus the actual receipt of medicines and consumables. As per authors' knowledge, this is one of the first few studies conducted in the country about the procurement of medical items, particularly medicines, through GeM. We undertook this study to comprehensively assess the procurement process and identify bottlenecks or inefficiencies to help

enhance the platform's effectiveness and reliability as a procurement tool for medical items.

Materials & Methods

This retrospective cross-sectional (record-based) study was conducted by the department of Hospital Administration and Medical Education & Research Unit, Base Hospital, Guwahati, Assam, a 699 bedded tertiary care hospital located in north eastern sectors of India. After obtaining the permission from the Base hospital, the data was analysed from the time medicine procurement started on GeM in the hospital. The analysed data is from April 2023 to March 2024. The data and documents were requested from the hospital's procurement cell, which forms part of the larger division of medical stores. Data related to items procured and budget spent since April 2023 was retrieved. Analysis was done using MS Excel and SPSS (IBM Corp. Version 28.0, Armonk, NY, USA) and descriptive statistical procedures were employed for analysis.

The brief procurement procedure followed by the hospital was as follows: the standard operating procedures (SoPs) were prepared by the hospital's procurement cell. The doctor-in-charge was nominated the member secretary of the procurement committee (MSPC) with a senior doctor as the Presiding officer and two other doctors from different departments as committee members. The procurement process was a long process spanning 5-6 months from receiving demand and supply of goods. The user departments prepare the demands based on the monthly maintenance figures (MMF) inventory management methodology. The demands are prepared separately for medicines, consumables such as gloves, sutures, needles, *etc.* and non-expendables along with required documents. Bill of Quantity (BoQ) bids are placed for medicines and consumables (except those which directly available on GeM), and custom bids are placed for non-expendables. Supplementary table in elaborates the procurement process with approximate timelines.

Results

The data of the past one year of all the orders placed on GeM for procurement of medical items – medicines, consumables and non-expendable items were analysed. A total demand of 1507 medicines and 1219 consumables was received from various departments of the hospital to be placed on the Government e-Marketplace (GeM) portal. The numbers

Table I. Items demanded and orders placed and materialised in the financial year 2023-24

| Stage of procurement | Medicines n (%) | Consumables n (%) |
|---------------------------------|--------------------|----------------------|
| Demand received | 1507 (100) | 1219 (100) |
| Not quoted/technically rejected | 501 (33.2) | 84 (6.9) |
| PN committee rejected | 209 (13.8) | 86 (7.1) |
| Orders placed | 797 (52.8) | 992 (81.3) |
| Orders materialised | 695 (46.1) | 945 (77.5) |

represent different nomenclatures of the medical items and not the quantity of a particular item. Among these, 501 medicines (33.2%) and 84 consumable (6.9%) items were 'Not Quoted' by suppliers/vendors or faced rejection on technical grounds on the GeM portal. The most common reason for rejection of items in the technical stage was incomplete/inadequate/incorrect document submission by the vendors participating in the bids or due to non-adherence to the technical specification mentioned in the BoQbids.

Furthermore, 209 medicines (13.8%) and 86 consumables (7.1%) were rejected during the price negotiation (PN) stage. The commonest reason for rejection at this stage was that the lowest most quoted price was higher than the last purchase price plus 10 per cent increment every year. Ultimately, after obtaining the final concurrence from the financial authorities, final supply orders (SOs) were placed for 797 (52.8%) medicines, 992 (81.3%) consumables, and 25 (100%) non-expendable items on GeM.

The items for which the supply orders were placed were received at the receipt cell of the hospital. The receipt cell was responsible for checking the delivered goods for correctness in regard to quantity, company/make, strength of medicines and price quoted. Any discrepancies in the above-mentioned features or non-delivery of goods by due date led to the cancellation of SOs. Of the final order placed, 102 of 797 (12.7%) SOs of medicine and 47 of 992 (4.7%) SOs of consumables were cancelled. The orders were cancelled for various reasons as follows: (a) failure to supply even after seeking extended delivery period; and (b) item-specification not as mentioned in the SO (Table I).

The costing of the supply orders which were placed was worth Indian rupee (INR) 1,29,02,963 for medicines, INR 7,60,52,738.57 for consumables and INR 39,72,491.52 for non-expendables. Orders worth INR 10,91,288.6 of medicines and INR 27,17,321

Table II. Supply orders placed on GeM, cancelled and finally accepted for consumption at the hospital in monetary terms

| Order status | Medicines (INR) | Consumables (INR) | Non- expendables (INR) |
|---------------------|--------------------|----------------------|------------------------------|
| Final orders placed | 1,29,02,963 | 7,60,52,738.57 | 39,72,491.52 |
| Orders cancelled | 10,91,288.6 | 27,17,321 | - |
| Orders materialised | 1,18,11,674.4 | 7,33,35,417.57 | 39,72,491.52 |

INR, Indian rupee

for consumables did not materialize because of the reasons mentioned above. Thus, for medicines, orders worth INR 1,18,11,674.4 and for consumables orders worth INR 7,33,35,417.57 materialized. A total of INR 8,91,19,583.49 orders materialized on GeM (Table II).

Of the 1507 medicine items demanded through GeM, 695 (46.1%) were successfully procured, indicating a 53.9 per cent shortfall. As far as consumables were concerned, the shortfall was lower at 274 units (22.5%) as against orders placed for 1219 units (Figure).

Discussion

Public procurement of medical items through GeM is an attempt to streamline the procurement procedures and provide much needed transparency. The procurement policy for medicines was revised and procurement of medicines and consumables through GeM was made mandatory with effect from May 2023². A well-functioning and established system with a large registered vendor base was done away with suddenly. Being an entirely new process, time was required for familiarization and training for the procurement cell staff. As the hospital navigated its procurement journey through GeM over the past year, several challenges emerged that required careful consideration and resolution.

In the study, the main challenge was faced in the procurement of medicines through GeM. The major bottleneck identified was 'Vendor non-participation' in the bidding stage and/or incorrect document submission by vendors leading to technical rejection, wherein 501 (33.2%) medicines and 84 (6.8%) consumables were not quoted. Non-quotation by vendors could be due to the logistic challenges at their end or disinterest in the vendors to provide medicines at far and peripheral

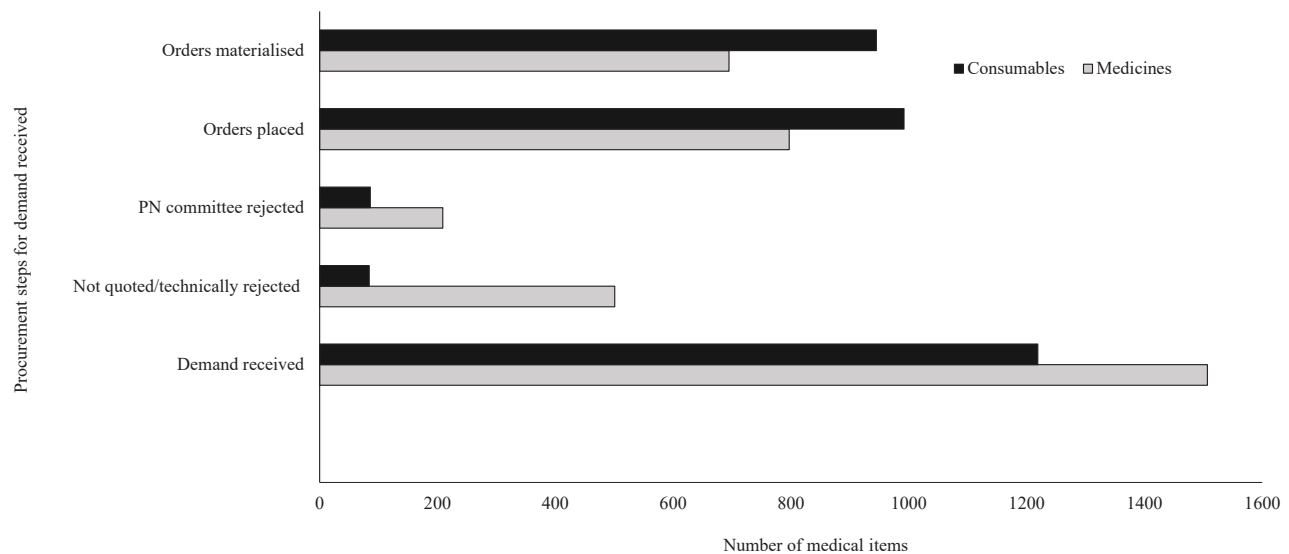


Figure. A bar graph presenting the status of medical items procured through GeM.

locations of northeast India. A study by Hazarika *et al*¹ described low participation of the domestic mid-size enterprises (MSEs) despite the MSEs provisions, due to apprehensions and perception about delay in releasing the contract payments by government institutions. Of the vendors who participated and from whom the quotes were received, the most common reason for rejection of items in the technical stage was incomplete/inadequate/incorrect document submission by the vendors/suppliers. A few items got rejected because of non-adherence to the technical specification as mentioned in the BoQ bids. It is recommended that a separate vendor base initiative needs to be done at GeM level for medicines and consumable suppliers who are International Organisation for Standardisation (ISO) or World Health Organisation (WHO) qualified. Price agreement with local vendors for longer duration (3-5 yr) for smaller quantity orders and emergency procurement is also warranted to improve vendor participation. *Jan Aushadhi* vendors may be encouraged to participate in the GeM portal. The *Jan Aushadi* vendors have more regional availability, and they deal with generic medicines only⁶. Their presence on GeM portal will improve the lead time and supply chain management. Also, all endeavours should be made by hospitals locally to increase the vendor base and to motivate them to register on GeM and participate in bidding cycles. Following registration on GeM, the vendors should be advised to go through the online courses/workshops for the e-procurement system to get the documentation right and know the procedure. Moon *et al*⁷ mentions establishing vendor relationships as a

challenge for implementing an e-procurement system in the government sector. Conversely, White *et al*⁸ suggests that e-procurement allows hospitals to more effectively evaluate supplier quality. Additionally, it can promote long-term partnerships between hospitals and suppliers, potentially enhancing the quality of care⁸.

The third bottleneck identified in the present study was at the 'price negotiation' (PN) stage, where 209 (13.8%) medicines and 86 (7.1%) consumables were rejected and were put up for re-tendering. The commonest reason for the rejection in the PN stage was when the price quoted by L1 vendor (vendor quoting the lowest price) is higher than the last purchase price/rate (LPP/LPR) plus 10 per cent increment per year. This rejection can be prevented at user end by obtaining government price lists and supply orders from other governmental institutions. It was realised, that despite this step being conducted diligently, prices of L1 vendors sometimes tend to be higher as compared to the LPP/LPR. It is imperative to mention here that the LPP/LPR are based on the procurement methods previously followed such as open tender enquiry, which were not on the-portal. Pentrakan *et al*⁹ in their article identified that the presence of varying prices set by suppliers for the same medicine product can lead to discrepancies and unreasonable pricing, further complicating the procurement process. A realistic price assessment should be done by leveraging prices from three different platforms: internet, available literature and LPP/LPR. Considering the inflation in post-COVID era, the criteria of rates matching the previous

LPP/LPR plus 10 per cent increment per year should be more flexible to ensure that maximum medicines and/or consumables are procured.

The fourth bottleneck identified was ‘supply failure’: where vendors failed to supply the orders within the specified delivery time and as per the specifications mentioned in the supply orders. The reasons were as follows: failure to supply even after seeking extended delivery period; item specifications not matching as per the supply order - mismatch of make, brand or strength, poor quality and rejection by the receipt cell/user department led to the cancellation of orders. Thus, only 695 (46.1%) medicine orders finally materialized and reached the user departments. These findings underscore significant gaps between demand and supply of both medicines and consumables through the e-procurement system which leads to a notable operational impact on the system. Petrankan *et al*⁹ mentioned subjectivity involved in drug procurement, where factors such as determining the brand of medicine, sales volume, and quality standards monitoring at the unit level constituted big challenges in procurement. It is suggested that by strengthening supplier agreements¹⁰ and improving specification clarity by the user and implementing stricter penalties for non-compliance on the GeM portal may help reduce the rate of unmaterialised orders.

The major shortfall was observed for medicines followed by consumables procured through GeM. The needs of healthcare sector in regard to medicines and consumables are varied and cannot be strictly defined by a fixed criterion. Different strengths of same medicines are required for different patients and sometimes in the same patient during different stages of treatment. For consumables, it was also observed that similar products were available in different categories, resulting in difficulty in comparison and processing. Addressing these discrepancies is imperative to ensure uninterrupted healthcare services and mitigate the risk of medicine stockouts, which can profoundly impact patient care. The process may be streamlined by the initiative at the highest level (GeM) where reliable pharmaceutical companies are ported in and the vendor base is increased so that more and more direct orders for medicines maybe placed on GeM under categories which sync with WHO and/or the Ministry of Health and Family Welfare (MOHFW), Government of India standard drug list categories.

The software used by the hospital for inventory management and the GeM procurement module are mutually exclusive. Therefore, the analytics of the in-

house and GeM procurement modules offered very little in measuring the lead time and the cycle time for the processes. Inventory management at the store level is complex due to the intermingling of manual processes overlaid on different platforms for inventory management and procurement. This prevents minute monitoring of inventory control processes. Further, the user access to vendor performance and vendor side matrices is limited to provide meaningful inference in the current study. These were identified as few limitations of our investigation.

The overall goal of medicines procurement is to ensure that a product is purchased in the right quantity and quality at a price that is cost-effective and is available when required. The findings of our study highlight various challenges encountered during the procurement process through GeM, including non-quotation by suppliers, technical rejections, and rejections during the negotiation and verification stages. Despite these challenges, the majority of demanded items were successfully procured through the GeM platform, demonstrating its efficacy in facilitating the procurement of medical items. Further data analysis on systemic issues in the public procurement process of medicine and medical consumables is warranted to address the identified challenges and optimize the procurement process for enhanced efficiency and effectiveness.

In conclusion, the procurement of medicines and consumables through GeM represents a paradigm shift in public procurement practices in India, offering a digital platform to enhance transparency, efficiency, and accountability in the procurement process. The present study identified major bottlenecks, including non-quotation of medicines, price negotiation rejections, and vendor supply failures. These issues have led to substantial discrepancies between the initial demand and the actual supply, impacting the efficiency and reliability of the procurement process. To enhance the efficiency of GeM, targeted efforts are needed to address vendor-related issues, optimize price negotiation, and improve supply chain transparency¹¹.

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References

1. National Institute of Public Finance and Policy. *Public procurement in India: Assessment of institutional mechanism, challenges, and reforms*. Available from: https://www.nipfp.org.in/media/medialibrary/2017/07/WP_2017_204.pdf, accessed on October 11, 2024.
2. Government e-Marketplace. *Procurement reimaged*. Available from: <https://gem.gov.in/>, accessed on February 25, 2024.
3. European Commission: European Health and Digital Executive Agency. *Study on best practices in the public procurement of medicines: Final report*. LU: Publications Office of the European Union; 2022.
4. Mehra A, Sharma S, Koushal V. Implementation of government e-marketplace in a tertiary care hospital of North India: Advantages and challenges. *Int J Res Med Sci* 2020; 8 : 3934.
5. Mackey TK, Cuomo RE. An interdisciplinary review of digital technologies to facilitate anti-corruption, transparency and accountability in medicines procurement. *Glob Health Action* 2020; 13 : 1695241.
6. India.gov.in. National Portal of India. *Pradhan Mantri Bhartiya Janaushadhi Pariyojana*. Available from: <https://www.india.gov.in/spotlight/pradhan-mantri-bhartiya-janaushadhi-pariyojana>, accessed on February 25, 2024.
7. Moon MJ. E-procurement management in state governments: Diffusion of e-procurement practices and its determinants. *J Public Procure* 2005; 5 : 54-72.
8. White A, Daniel EM. The impact of e-marketplaces on dyadic buyer-supplier relationships: evidence from the healthcare sector. *J Enterp Inf Manag* 2004; 17 : 441-53.
9. Pentrakan A, Yang CC, Wong WK. How well does a sequential minimal optimization model perform in predicting medicine prices for procurement system? *Int J Environ Res Public Health* 2021; 18 : 5523.
10. Usuemerai PA, Ibikunle OE, Abass LA, Alemede V, Nwankwo EI, Mbata AO. Advanced supply chain optimization for emerging market healthcare systems. *Int J Manag Entrep Res* 2024; 6 : 3321-56.
11. Adebayo VI, Paul PO, Ogugua J, Eyo-Udo NL. Procurement in healthcare: Ensuring efficiency and compliance in medical supplies and equipment management. *MSARR* 2024; 11 : 060-9.

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