Impact of the Drugs (Price Control) Order (DPCO,2013) on the Price of Eight Medical Devices, on Industry and Consumers in Terms of Availability and Affordability

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Table of Contents

Table of Figures

Table of Tables

Abbreviations

Abbreviations	Elaboration
SIDBI	Small Industries Development Bank of India
DCA	Drugs and Cosmetics Act
DPCO	Drug Price Control Order
NPPA	National Pharmaceutical Pricing Authority
CAGR	Compound Annual Growth Rate
IPC	Indian Pharmacopoeia Commission
SPI	Strengthening of Pharmaceutical Industry
MSME	Ministry of Micro, Small & Medium Enterprises
SME	Small and Medium-sized Enterprises
APICF	Assistance to Pharmaceutical Industry for Common Facilities
PTUAS	Pharmaceutical Technology Upgradation Assistance Scheme
PMPDS	Pharmaceutical and Medical Devices Promotion and Development Scheme
PMC	Project Management Consultant
CAPI	Computer-Assisted Personal Interviews
MBP	Market Base Pricing
NLEM	National List of Essential Medicines
MNC	Multinational Corporation
MAPE	Maximum Allowable Post Manufacturing Expenses
IPC	Indian Pharmacopoeia Commission
SDCA	State Drug Control Authority
MoC	Ministry of Chemical & Fertilizer
BPV	Blood Pressure Variability
R&D	Research & Development
COPD	Chronic Obstructive Pulmonary Disease
DES	Drug Eluting Stents
TMR	Trade Margin Rationalization
MRP	Maximum Retail price
NFHS	National Family Health Survey
CoP	Cost of Production
PTD	Price To Distributers
PTS	Price to Stockists
PTH	Price To hospital
LC	Landed Cost

1 Executive Summary

Project Overview

This comprehensive study, titled "Impact of the Drugs (Price Control) Order (DPCO,2013) on the Price of Eight Medical Devices, on Industry and Consumers in Terms of Availability and Affordability," explores the significant effects of price regulation in the medical device industry in India. The study covers an extensive field survey across 20 states and 50 districts, incorporating responses from 10,210 participants across seven stakeholder groups: Consumers, Retailers, Hospitals, Wholesalers, Distributors, MSMEs/Manufacturers, and Importers.

Key Medical Devices and Market Dynamics

1. **Pulse Oximeters**: The global market was valued at USD 2.4 billion in 2022, with a CAGR of 6.4% projected from 2023 to 2028. In India, the market is expected to grow at a CAGR of over 50% from 2021 to 2028.
2. **Nebulizers**: The global market is anticipated to grow from USD 1.99 billion in 2023 to USD 2.85 billion by 2028.
3. **Glucometers**: Projected to reach USD 17.03 billion globally by 2028, the Indian market is expected to grow at a CAGR of 7.08% through 2028.
4. **Oxygen Concentrators**: The global market is estimated at USD 3.5 billion in 2023, while the Indian market is valued at USD 102.63 million in 2023.
5. **Cardiac Stents**: Expected to grow from USD 9.32 billion in 2022 to USD 8.76 billion by 2028 globally, with the Indian market estimated at USD 309.6 million in 2022.
6. **Blood Pressure Monitors**: The global market is forecasted to reach USD 7.22 billion by 2028, with the Indian market projected to grow at over 14% CAGR from 2023 to 2028.
7. **Digital Thermometers**: The global market is set to reach USD 1.3 billion by 2028, with the Indian market anticipated to grow at a 9.90% CAGR until 2028.
8. **Knee Implants**: The global market is expected to expand from USD 11.1 billion in 2022 to USD 14.13 billion by 2028.

Impact of the Drugs (Price Control) Order (DPCO,2013) on Prices – Pre Covid vs Post Covid

- **Significant Price Reduction**: The (DPCO,2013) led to price reductions ranging from 10.8% to 44.4% across the eight studied medical devices by 2020. Glucometers saw the most significant reduction (44.4%), followed by nebulizers (37.5%).
- **Average Price Decrease**: The average price reduction across all devices was approximately 25.74%.

COVID-19 Impact

- The pandemic significantly increased the demand for devices such as Pulse oximeters and Nebulizers, impacting market dynamics and healthcare responses.

Regulatory and Market Response

- **Regulatory Framework**: The Drugs (Price Control) Order, 2013 stands as a pivotal regulatory framework within India's pharmaceutical landscape. Instituted under the Essential Commodities Act of 1955, its primary aim is to facilitate accessibility to essential medicines for the populace at fair and reasonable prices. This legislation empowers the government to monitor and control the prices of essential drugs, preventing exorbitant pricing that could hinder access to vital medications for the public. By setting price ceilings and regulating the market, the (DPCO,2013) contributes significantly to ensuring affordability and availability of crucial pharmaceuticals, aligning with the broader objective of making healthcare more accessible to all segments of society within the country.
- **Business Strategies**: Trade Margin Rationalization serves as a mainstay in business strategy within the pharmaceutical industry, especially in response to evolving pricing structures and market dynamics. This approach involves regulating and optimizing the profit margins across the supply chain to ensure a fair balance between the interests of all stakeholders, including manufacturers, distributors, and standalone pharmacies. By standardizing and rationalizing these margins, the industry aims to create a more transparent and equitable pricing framework for essential drugs. This strategy not only helps in controlling excessive profits but also fosters a more competitive environment, encouraging efficiency and innovation within the sector. Moreover, it aligns with the overarching goal of ensuring affordable access to vital medications for consumers while promoting sustainable growth and stability within the pharmaceutical market.
- **Awareness of Notifications among Stakeholders**: There are notable disparities among stakeholders within the pharmaceutical ecosystem. Standalone pharmacies emerge as the most well-informed segment, with approximately 65% displaying awareness of these notifications. In contrast, manufacturers lag significantly behind, with only about 17% demonstrating adequate awareness. This discrepancy in awareness levels across different stakeholder groups highlights a significant communication gap within the industry. Standalone pharmacies, often at the forefront of consumer interactions, appear more attuned to regulatory changes due to their direct engagement with customers. Conversely, manufacturers, integral to the production process, seem less informed, potentially indicating communication lapses or challenges in disseminating crucial updates across the supply chain. Addressing these gaps in awareness becomes imperative to ensure a more cohesive and informed pharmaceutical landscape, allowing all stakeholders to adapt efficiently to evolving regulations and market dynamics.

Primary Data Analysis

The analysis pertains to the % of respondents who perceived change in increase in demand, sales, costs/price and quality after the TMR notification on 6 medical devices and price fixation on coronary stents and knee implants.

1.1 Glucometer:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	47%	50%	65%	-	5%
Importers	-	62%	45%	6%	-
Distributor	67%	39%	74%	74%	-
Wholesalers	50%	56%	40%	52%	-
Standalone Pharmacies	-	39%	38%	41%	29%
Hospital Pharmacies	-	35%	38%	47%	52%

TABLE 1: OVERVIEW ON GLUCOMETER MEDICAL DEVICE

Supply: The increase in supply for Glucometers post-TMR notification compared to pre-TMR notification has been significant changes across different segments. 47% of Manufacturers witnessed an increase, 50% of wholesalers saw a witnessed rise, while 67% of distributors experienced the most substantial boost. We can infer that distributor took the lead in meeting the increased demand for Glucometers in the wake of the pandemic.

Demand: Post-TMR notification, there has been a significant surge in the demand for Glucometers, evident in the increased across various stakeholders: 50% of Manufacturers, 62% of importers ,39% of Distributors, 56% of Wholesalers, 39% of standalone pharmacies, and 35% Hospital pharmacies witnessed an increase in supply. This surge indicates a higher demand primarily routed through Wholesalers, marking them as the most significant avenue for Glucometer distribution. This shift might suggest that wholesalers have potentially streamlined availability and affordability, becoming pivotal in meeting the heightened demand.

Sales: Post-TMR notification, there has been a notable upsurge in Glucometer sales, evidenced by significant increases across stakeholders: 65% of Manufacturers, 45% of importers, 74% of Distributors, 40% of Wholesalers, 38% of both standalone pharmacies and Hospital pharmacies witnessed an increase in sales. Remarkably, the surge in sales is predominantly attributed to Distributors, marking them as the primary driver of heightened demand post-pandemic. This trend indicates that distributors have potentially enhanced both the availability and affordability of Glucometers, showcasing their pivotal role in ensuring widespread accessibility and potentially competitive pricing in the market.

Price: Post-TMR notification, there has been a substantial escalation in Glucometer costs, evidenced increases: 6% of importers, 74% of Distributors, 52% of Wholesalers, 41% of standalone pharmacies, and 4% of Hospital pharmacies witnessed an increase in costs. Notably, the surge in costs is predominantly spearheaded by Distributors, marking them as the primary contributor to the heightened cost post-pandemic. This trend suggests that distributors might have experienced challenges in maintaining the affordability of Glucometers, potentially impacting their availability to consumers. The substantial cost increase by distributors compared to other distribution channels implies potential constraints in ensuring cost-effective accessibility, raising concerns about affordability

for consumers in the post-TMR market landscape and also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Following the TMR notification impact, there has been a noticeable shift in Glucometer quality across stakeholders, with 5% of Manufacturers witnessed an increase, 29% of standalone pharmacies, and a substantial leap in quality observed in Hospital pharmacies by 52% of respondents. Significantly, Hospital pharmacies have emerged as leaders in elevating Glucometer quality post-pandemic. This suggests that these healthcare facilities have prioritized enhancing the standard and reliability of Glucometers, potentially ensuring better accuracy and performance. While standalone pharmacies have also shown improvement, the considerable increase within Hospital pharmacies indicates a concerted effort to provide higher quality medical devices to patients.

1.2 Pulse Oximeter:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	45%	39%	88%	-	5%
Importers	-	65%	50%	8%	-
Distributor	54%	67%	73%	80%	-
Wholesalers	27%	61%	41%	49%	-
Standalone Pharmacies	-	47%	49%	50%	38%
Hospital Pharmacies	-	45%	48%	58%	42%

TABLE 2: OVERVIEW ON PULSE OXIMETER MEDICAL DEVICE

Supply: Post- TMR notification, there has been a noticeable increase in the supply of pulse oximeters across various Stakeholders: 45% of Manufacturers witnessed an increase, 54% of Distributors, and 27% of Wholesalers witnessed an increase in supply. Notably, Distributors have experienced the most significant upsurge in supply post-TMR notification, indicating their pivotal role in making pulse oximeters more widely available. This surge in supply suggests that distributors might have played a crucial role in ensuring the availability and accessibility of these vital medical devices in the market. While Manufacturers and Wholesalers also showed increases, the substantial rise within Distributors points towards their proactive efforts in meeting the heightened demand for pulse oximeters.

Demand: Post-TMR notification, there has been a substantial surge in the demand for pulse oximeters across various Stakeholders, showcasing significant percentage increases: 39% of Manufacturers, 65% of importers, 61% of Wholesalers, 47% of standalone pharmacies, and 45% of Hospital pharmacies witnessed an increase in demand. Notably, Distributors have witnessed the most substantial increase in demand post-TMR notification, marking them as the primary drivers of this heightened need. This surge in demand implies that distributors have potentially played a pivotal role in ensuring the availability and accessibility of pulse oximeters, responding proactively to the increased market requirements. While other Stakeholders also experienced significant rises, the notable increase within Distributors underlines their agility in meeting the amplified demand for these critical healthcare devices.

Sales: Post-TMR notification, there has been a remarkable surge in pulse oximeter sales across various Stakeholders, demonstrating substantial increases: 83% of Manufacturers, 50% of importers, 73% of Distributors, 41% of Wholesalers, 49% of standalone pharmacies, and 48% of Hospital pharmacies witnessed an increase in sales. Significantly, Manufacturers have experienced the most significant surge in sales post-pandemic, marking them as the primary contributors to this escalated demand. This surge in sales indicates that Manufacturers have likely streamlined the availability of pulse

oximeters in response to increased market needs. While other Stakeholders also saw considerable increases, the notable surge within Manufacturers underscores their role in meeting the heightened demand for these critical medical devices, potentially influencing their availability, and potentially ensuring a broader accessibility for consumers.

Price: Post-TMR notification, there has been a substantial increase in pulse oximeter costs across various Stakeholders, with indicating the increase in costs: 8% of importers, 80% of Distributors, 58% of Hospital pharmacies, 50% of standalone pharmacies, and 49% of Wholesalers witnessed an increase in costs. Notably, the most significant increase in costs is observed among Distributors, suggesting that they have played a pivotal role in the surge in costs for these essential medical devices. This trend implies that while Distributors may have contributed to improved availability by meeting the heightened demand, their role may have influenced the affordability aspect negatively, potentially posing challenges for consumers in terms of cost-effectiveness, also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Following the impact of TMR notification, there has been a discernible improvement in the quality of pulse oximeters across various stakeholders, with 5% of Manufacturers witnessing an increase and a more substantial leap in quality of 38% in standalone pharmacies and 42% of Hospital pharmacies. Notably, Hospital pharmacies have emerged as leaders in enhancing pulse oximeter quality post-pandemic, suggesting a concerted effort to provide more accurate and reliable medical devices to patients. While standalone pharmacies have also shown improvement, the significant increase within Hospital pharmacies underscores a commitment to elevating standards, potentially ensuring better accuracy and performance.

1.3 Digital Thermometer:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	52%	64%	54%	-	0%
Importers	-	62%	51%	5%	-
Distributor	68%	82%	76%	84%	-
Wholesalers	48%	36%	43%	59%	-
Standalone Pharmacies	-	41%	42%	42%	33%
Hospital Pharmacies	-	60%	61%	74%	50%

TABLE 3: OVERVIEW ON DIGITAL THERMOMETER MEDICAL DEVICE

Supply: Post-TMR, there has been a notable surge in the supply of digital thermometers across various Stakeholders: 52% of Manufacturers, 48% of Wholesalers, and a substantial increase witnessed among 62% of Distributors. Notably, Distributors have witnessed the most significant surge in supply post-pandemic, highlighting their pivotal role in making digital thermometers more widely available. This surge indicates that distributors have actively responded to the increased demand, potentially ensuring better availability of these essential healthcare devices. While Manufacturers and Wholesalers also experienced notable increases, the substantial rise within Distributors suggests their proactive approach in meeting the amplified demand for digital thermometers.

Demand: Post-TMR notification, there has been a significant surge in the demand for digital thermometers across various Stakeholders, with 64% of Manufacturers, 62% of importers, 36% of Wholesalers, 41% of standalone pharmacies, and 60% of Hospital pharmacies witnessed an increase in demand. Notably, Distributors have experienced the most substantial increase in demand post-pandemic, emerging as the primary drivers of this heightened need. This surge suggests that

distributors have played a crucial role in ensuring the availability and accessibility of digital thermometers, responding proactively to the increased market requirements. While other Stakeholders also witnessed significant increases, the notable surge within Distributors underlines their agility in meeting the amplified demand for these critical healthcare devices.

Sales: Following the onset of TMR notification, there has been a substantial surge in sales of digital thermometers witnessed by various Stakeholders: 54% of Manufacturers, 51% of importers, 76% of Distributors, 43% of Wholesalers, 42% of standalone pharmacies, and 61% of Hospital pharmacies. Notably, Manufacturers have experienced the most significant increase in sales post-pandemic, marking them as the primary contributors to this escalated demand. This surge in sales implies that Manufacturers have likely streamlined the availability of digital thermometers in response to increased market needs. While other Stakeholders also saw considerable increases, the notable surge within Manufacturers underscores their role in meeting the heightened demand for these critical medical devices.

Price: Post –TMR notification, there has been a substantial increase in digital thermometer costs witnessed across various Stakeholders, notably with 5% of importers, 84% of Distributors witnessing a remarkable increase, followed by 74% of Hospital pharmacies, 59% of Wholesalers, and 42% of standalone pharmacies witnessed an increase in costs. The surge in costs primarily observed among Distributors indicates their significant role in the uptick of costs for these crucial medical devices post-pandemic. While Distributors might have contributed to enhanced availability by meeting the heightened demand, their influence seems to have impacted affordability negatively, potentially posing challenges for consumers seeking these essential healthcare tools. The substantial hike in prices by distributors suggests potential affordability concerns, underscoring the importance of exploring strategies to maintain cost-effectiveness for consumers seeking digital thermometers in the post-TMR notification also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Post-TMR notification, there has been a noticeable improvement in the quality of digital thermometers witnessed across various Stakeholders: 33% of standalone pharmacies witnessed an increase and 50% of Hospital pharmacies leading with a surge in quality. Significantly, Hospital pharmacies have emerged as frontrunners in enhancing digital thermometer quality post-pandemic, indicating a concerted effort to provide more accurate and reliable medical devices for patient care. While standalone pharmacies also demonstrated improvement, the considerable increase within Hospital pharmacies underscores a commitment to elevating standards, potentially ensuring better accuracy and performance.

1.4 Oxygen Concentrator:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	54%	65%	58%	-	0%
Importers	-	53%	63%	9%	-
Distributor	67%	68%	72%	75%	-
Wholesalers	66%	63%	37%	56%	-
Standalone Pharmacies	-	39%	41%	31%	31%
Hospital Pharmacies	-	67%	59%	72%	48%

TABLE 4: OVERVIEW ON OXYGEN CONCENTRATOR MEDICAL DEVICE

Supply: Post- TMR notification, there has been a significant surge in the supply of oxygen concentrators witnessed across various Stakeholders, with 54% of Manufacturers witnessed an increase, 67% of

Distributors, and a notable upswing observed among 66% of Wholesalers witnessed an increase in supply. Notably, Wholesalers have experienced the most substantial surge in supply post-pandemic, marking them as the primary contributors to the heightened availability of these critical medical devices. This surge suggests that wholesalers have played a pivotal role in ensuring the accessibility and availability of oxygen concentrators, responding actively to the increased market demand. While Manufacturers and Distributors also showed significant increases, the notable surge within Wholesalers underscores their proactive approach in meeting the amplified demand for oxygen concentrators, potentially enhancing their availability and contributing to better accessibility and possibly more competitive pricing for consumers seeking these crucial medical devices.

Demand: Post-TMR notification, there has been a substantial surge in the demand for oxygen concentrators witnessed across various Stakeholders, with 65% of Manufacturers witnessed an increase, 53% of importers, 63% of Wholesalers, 39% of standalone pharmacies, and a considerable surge observed among 67% of Hospital pharmacies witnessed an increase in demand. Notably, Distributors have witnessed the most significant increase in demand post-pandemic, emerging as the primary drivers of this heightened need. This surge in demand suggests that distributors have played a pivotal role in ensuring the availability and accessibility of oxygen concentrators, actively responding to the increased market requirements. While other stakeholders also experienced notable increases, the significant surge within Distributors underlines their agility in meeting the amplified demand for these critical medical devices.

Sales: Post-TMR notification, there has been a substantial surge in the sales of oxygen concentrators witnessed across various Stakeholders, showcasing significant increases: 58% of Manufacturers, 37% of Wholesalers, 41% of standalone pharmacies, and 59% of Hospital pharmacies witnessed an increase in sales. Notably, Distributors have experienced the most significant surge in sales post-pandemic, marking them as the primary contributors to this escalated demand. This surge in sales implies that Distributors have potentially played a pivotal role in streamlining the availability of oxygen concentrators, meeting the increased market needs effectively.

Price: Post-TMR notification, there has been a noticeable surge in costs for oxygen concentrators witnessed across various Stakeholders, with 9% of importers, 75% of Distributors witnessed an increase, followed by 72% of Hospital pharmacies, 56% of Wholesalers, and 31% of standalone pharmacies witnessed an increase in costs. Notably, Distributors have witnessed the most substantial surge in costs post-TMR notification, indicating their significant impact on the uptick of costs for these essential medical devices. While Distributors might have contributed to enhanced availability by meeting heightened demand, their influence appears to have impacted affordability negatively, potentially posing challenges for consumers seeking these vital healthcare tools. The remarkable hike in costs by distributors implies potential affordability concerns, underscoring the importance of exploring strategies to maintain cost-effectiveness for consumers requiring oxygen concentrators in the post-TMR notification, also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Post-TMR notification, there has been a discernible improvement in the quality of Oxygen concentrators witnessed across various Stakeholders, notably with 31% of standalone pharmacies witnessed an increase and 48% of Hospital pharmacies leading with a substantial surge in quality. Significantly, Hospital pharmacies have emerged as leaders in enhancing the quality of Oxygen concentrators post-pandemic, indicating a focused effort to provide more reliable and effective medical devices for patient care. While standalone pharmacies also demonstrated improvement, the considerable increase within Hospital pharmacies underscores a commitment to elevating standards, potentially ensuring better performance and reliability of Oxygen concentrators. This surge in quality

within hospital settings implies a positive advancement in the reliability of these essential devices used in critical healthcare scenarios, potentially leading to improved patient outcomes.

1.5 BP Monitor:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	48%	52%	62%	-	6%
Importers	-	57%	49%	10%	-
Distributor	60%	45%	67%	81%	-
Wholesalers	52%	35%	40%	52%	-
Standalone Pharmacies	-	40%	37%	42%	30%
Hospital Pharmacies	-	36%	39%	47%	36%

TABLE 5: OVERVIEW ON BP MONITOR MEDICAL DEVICE

Supply: Following the impact of TMR notification, there has been a noticeable surge in the supply of BP Monitors across Stakeholders, showcasing significant increases: 48% of Manufacturers at 52% of Wholesalers, and a notable upswing observed among 60% of Distributors. Notably, Distributors have experienced the most substantial increase in supply post-pandemic, indicating their pivotal role in enhancing the availability of these vital medical devices. This surge suggests that distributors have actively responded to the increased demand, potentially ensuring better availability and accessibility of BP Monitors. While Manufacturers and Wholesalers also saw significant increases, the substantial rise within Distributors highlights their proactive approach in meeting the amplified demand for BP Monitors, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking these crucial healthcare devices.

Demand: Post- TMR notification, there has been a notable surge in the demand for BP Monitors witnessed across various Stakeholders, with 52% of Manufacturers, 57% of importers, 40% of standalone pharmacies, 45% of Distributors, and 35% of Wholesalers, while 36% Hospital pharmacies witnessed an increase in demand. Remarkably, Manufacturers have experienced the most significant increase in demand post-TMR notification, marking them as the primary contributors to this heightened need. This surge in demand implies that Manufacturers have played a crucial role in ensuring the availability and accessibility of BP Monitors, actively responding to the increased market requirements. While other Stakeholders also saw notable increases, the substantial rise within Manufacturers underscores their pivotal role in meeting the amplified demand for these essential medical devices, potentially contributing to improved availability and competitive pricing for consumers seeking BP Monitors.

Sales: Post-TMR notification, there has been a significant surge in BP Monitor sales across various Stakeholders, notably with 62% of Manufacturers witnessed an increase, 49% of importers, 67% of Distributors, 40% of Wholesalers, 37% of standalone pharmacies, and 39% of Hospital pharmacies witnessed an increase in sales. Notably, Distributors have witnessed the most substantial surge in sales post-pandemic, emerging as the primary drivers of this heightened demand. This surge indicates that Distributors have likely played a pivotal role in ensuring the availability and accessibility of BP Monitors, actively responding to the increased market needs. While other Stakeholders also experienced notable increases, the remarkable surge within Distributors underlines their crucial role in meeting the amplified demand for these critical medical devices, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking BP Monitors.

Price: In the aftermath of TMR notification, there has been a noticeable surge in costs for BP Monitors across various Stakeholders, with 10% of importers, 81% of Distributors witnessing a substantial increase, followed by 47% of Hospital pharmacies, 52% of Wholesalers, and 42% of standalone pharmacies witnessed an increase in costs. The surge in costs primarily observed among Distributors suggests their significant impact on the uptick of costs for these crucial medical devices post-TMR notification. While Distributors may have played a role in enhanced availability by meeting heightened demand, their influence appears to have impacted affordability negatively, potentially posing challenges for consumers seeking these essential healthcare tools. The remarkable hike in prices by distributors implies potential affordability concerns, highlighting the importance of exploring strategies to maintain cost-effectiveness for consumers requiring BP Monitors in the post-TMR notification, also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Post-TMR notification, there has been a notable improvement in the quality of BP Monitors witnessed across various Stakeholders, with 30% of standalone pharmacies and 36% of Hospital pharmacies witnessed a substantial increase in quality. Significantly, Hospital pharmacies have emerged as frontrunners in enhancing BP Monitor quality post-TMR notification, indicating a focused effort to provide more accurate and reliable medical devices for patient care. While standalone pharmacies also demonstrated improvement, the considerable increase within Hospital pharmacies underscores a commitment to elevating standards, potentially ensuring better accuracy and performance of BP Monitors. This surge in quality within hospital settings suggests a positive advancement in the reliability of these essential devices used in critical healthcare scenarios, potentially leading to improved patient care outcomes.

1.6 Nebulizer:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	61%	52%	71%	-	4%
Importers	-	61%	50%	9%	-
Distributor	67%	58%	69%	70%	-
Wholesalers	40%	36%	34%	60%	-
Standalone Pharmacies	-	41%	41%	43%	30%
Hospital Pharmacies	-	71%	60%	84%	55%

TABLE 6: OVERVIEW ON NEBULIZER MEDICAL DEVICE

Supply: Post-TMR, there has been a noticeable surge in Nebulizer supply witnessed across various Stakeholders, with 61% of Manufacturers witnessed an increase, 40% of Wholesalers, and a notable upswing observed among 67% of Distributors witnessed an increase in supply. Notably, Distributors have experienced the most substantial surge in supply post-TMR notification, marking them as the primary contributors to the heightened availability of these critical medical devices. This surge suggests that distributors have actively responded to the increased demand, potentially ensuring better availability and accessibility of Nebulizers. While Manufacturers and Wholesalers also saw significant increases, the substantial rise within Distributors highlights their proactive approach in meeting the amplified demand for Nebulizers, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking these crucial healthcare devices.

Demand: Post-TMR notification, there has been a notable surge in demand for Nebulizers witnessed across various Stakeholders, with 52% of Manufacturers witnessed increase, 61% of importers, 41% of standalone pharmacies, 36% of Wholesalers, and a substantial surge observed among 71% of Hospital

pharmacies. Remarkably, Distributors have witnessed the most significant surge in demand post-TMR notification, emerging as the primary drivers of this heightened need. This surge indicates that Distributors have played a crucial role in ensuring the availability and accessibility of Nebulizers, actively responding to the increased market requirements. While other Stakeholders also experienced notable increases, the significant surge within Distributors underlines their pivotal role in meeting the amplified demand for these critical medical devices, potentially contributing to improved availability and potentially competitive pricing for consumers seeking Nebulizers.

Sales: Post-TMR notification, there has been a remarkable surge in Nebulizer sales witnessed across various Stakeholders, notably with 71% of Manufacturers marking a substantial increase, 50% of importers, 60% of Hospital pharmacies, 69% of Distributors, and 41% of standalone pharmacies, while 34% Wholesalers witnessed an increase in sales. Significantly, Manufacturers have experienced the most significant surge in sales post-TMR notification, marking them as the primary contributors to this escalated demand. This surge in sales implies that Manufacturers have likely streamlined the availability of Nebulizers in response to increased market needs. While other Stakeholders also saw notable increases, the substantial rise within Manufacturers underscores their critical role in meeting the heightened demand for these essential medical devices, potentially influencing their availability, and ensuring a broader accessibility for consumers seeking Nebulizers.

Price: In the aftermath of TMR notification, there has been a substantial increase in costs for Nebulizers witnessed across various Stakeholders, with 9% of importers, 70% of Distributors witnessing a significant increase, 60% of Wholesalers, 43% of standalone pharmacies, and 84% of Hospital pharmacies witnessed an increase in costs. Notably, Hospital pharmacies have experienced the most significant surge in costs post-pandemic, indicating their substantial impact on the uptick of costs for these crucial medical devices. While Hospital pharmacies may have contributed to enhanced availability by meeting heightened demand, their influence appears to have impacted affordability negatively, potentially posing challenges for consumers seeking these essential healthcare tools, also indicates a widespread trend of pressure on margins on the distribution chain.

Quality: Following the impact of TMR notification, there has been a discernible improvement in the quality of Nebulizers witnessed across various Stakeholders, with 30% of standalone pharmacies witnessed an increase and 55% of Hospital pharmacies leading with a substantial surge. Significantly, Hospital pharmacies have emerged as frontrunners in enhancing Nebulizer quality post-pandemic, indicating a focused effort to provide more reliable and effective medical devices for patient care. While standalone pharmacies also demonstrated improvement, the considerable increase within Hospital pharmacies underscores a commitment to elevating standards, potentially ensuring better accuracy and performance of Nebulizers. This surge in quality within hospital settings suggests a positive advancement in the reliability of these essential devices used in critical healthcare scenarios, potentially leading to improved patient care outcomes.

1.7 Cardiac Stents:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	54%	66%	60%	-	1%
Importers	-	57%	49%	8%	-
Distributor	72%	52%	80%	83%	-
Wholesalers	45%	39%	44%	58%	-
Standalone Pharmacies	-	-		-	-

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Hospital Pharmacies	-	53%	59%	67%	47%

TABLE 7: OVERVIEW ON CORONARY STENTS MEDICAL DEVICE

Supply: Post notification for fixation on ceiling prices for cardiac stents, there has been a substantial surge in the supply of Cardiac Stents witnessed across various Stakeholders, with 54% of Manufacturers witnessed an increase, 45% of Wholesalers, and a notable upswing observed among 72% of Distributors witnessed an increase in supply. Remarkably, Distributors have experienced the most significant surge in supply post-notification on ceiling prices, marking them as the primary contributors to the heightened availability of these critical medical devices. This surge suggests that distributors have actively responded to the increased demand, potentially ensuring better availability and accessibility of Cardiac Stents. While Manufacturers and Wholesalers also saw significant increases, the substantial rise within Distributors highlights their proactive approach in meeting the amplified demand for Cardiac Stents, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking these crucial medical devices.

Demand: In the aftermath of the notification for fixation on ceiling prices for cardiac stents, there has been a significant surge in the demand for Cardiac Stents witnessed across various Stakeholders, with 66% of Manufacturers witnessed an increase, 57% of importers, 53% of Hospital pharmacies, 39% of Wholesalers and 52% of Distributors witnessed an increase in demand. Notably, Distributors have experienced the most substantial surge in demand post notification on ceiling prices for cardiac stents, emerging as the primary drivers of this heightened need. This surge indicates that Distributors have played a crucial role in ensuring the availability and accessibility of Cardiac Stents, actively responding to the increased market requirements. While other Stakeholders also experienced notable increases, the significant surge within Distributors underlines their pivotal role in meeting the amplified demand for these critical medical devices, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking Cardiac Stents.

Sales: In the wake of notification for fixation on ceiling prices for cardiac stents, there has been a substantial surge in the sales of Cardiac Stents witnessed across various Stakeholders, with 60% of Manufacturers,49% of importers, 59% of Hospital pharmacies, 80% of Distributors and 44% of Wholesalers witnessed an increase in sales. Notably, Manufacturers have experienced the most significant increase in sales post-notification on ceiling prices for cardiac stents, marking them as the primary contributors to this escalated demand. This surge in sales implies that Manufacturers have likely streamlined the availability of Cardiac Stents in response to increased market needs. While other Stakeholders also saw notable increases, the substantial rise within Manufacturers underscores their critical role in meeting the heightened demand for these essential medical devices, potentially influencing their availability and ensuring a broader accessibility for consumers seeking Cardiac Stents.

Price: Post notification for fixation on ceiling prices for cardiac stents, there has been a noticeable surge in Cardiac Stents witnessed costs across various Stakeholders, with 8% of importers, 83% of Distributors witnessing a significant increase, 67% of Hospital pharmacies, and 58% of Wholesalers witnessed an increase in costs. Notably, Hospital pharmacies have experienced the most significant surge in prices post-notification on ceiling prices for cardiac stents, indicating their substantial impact on the uptick of costs for these crucial medical devices. While Hospital pharmacies may have contributed to enhanced availability by meeting heightened demand, their influence seems to have impacted affordability negatively. The remarkable hike in prices by hospital pharmacies implies potential affordability concerns, highlighting the importance of exploring strategies to maintain cost-effectiveness for consumers.

Quality: Following the impact of notification for fixation on ceiling prices for cardiac stents, there has been a significant improvement in the quality of Cardiac Stents, albeit notably observed in 47% of Hospital pharmacies witnessed an increase in quality, while 1% of Manufacturers witnessed an increase. The substantial enhancement in quality within Hospital pharmacies underscores their dedicated efforts to elevate the standards of these critical medical devices post-notification on ceiling prices for cardiac stents. While Manufacturers saw a minor increase, the considerable surge within Hospital pharmacies implies a focused endeavour to enhance the reliability and effectiveness of Cardiac Stents used in critical healthcare scenarios. This surge in quality within hospital settings suggests a positive advancement in the reliability of these essential devices, potentially leading to improved patient care outcomes. However, assessing availability and affordability necessitates further exploration as increased quality might not necessarily correlate with accessibility or cost-effectiveness.

1.8 Knee Implants:

Change in (Post COVID)	Supply	Demand	Sales	Price	Quality
Manufacturer	42%	58%	64%	-	2%
Importers	-	57%	57%	10%	-
Distributor	67%	42%	58%	71%	-
Wholesalers	38%	24%	31%	44%	-
Standalone Pharmacies	-	-	-	-	-
Hospital Pharmacies	-	64%	62%	88%	45%

TABLE 8: OVERVIEW ON KNEE IMPLANTS MEDICAL DEVICE

Supply: Post-notification for fixation on ceiling prices on knee implants, there has been a noticeable surge in the supply of knee implants across various Stakeholders, notably with a 42% of manufacturers witnessed an increase, 38% of Wholesalers, and a substantial surge observed among 67% Distributors witnessed an increase in supply. Notably, Distributors have experienced the most significant surge in supply post-notification on ceiling prices for knee implants, marking them as the primary contributors to the heightened availability of these critical medical devices. This surge suggests that distributors have actively responded to the increased demand, potentially ensuring better availability and accessibility of knee implants. While Manufacturers and Wholesalers also saw notable increases, the substantial rise within Distributors underscores their proactive approach in meeting the amplified demand for knee implants, potentially contributing to improved availability and possibly more competitive pricing for consumers seeking these crucial medical devices.

Demand: In the wake of notification for fixation on ceiling prices for knee implants, there has been a substantial surge in the demand for Knee implants witnessed across various Stakeholders, notably with a 58% of manufacturers witnessed an increase, 57% of importers, 24% of Wholesalers, 42% of Distributors, and a significant surge observed among 64% of Hospital pharmacies. Notably, Manufacturers have experienced the most significant surge in demand post-pandemic, marking them as the primary drivers of this heightened need. This surge implies that Manufacturers have likely responded swiftly to meet the increased market demand for Knee implants, potentially contributing to improved availability. While other Stakeholders also saw notable increases, the substantial rise within Manufacturers underscores their pivotal role in meeting the amplified demand for these critical medical devices, potentially influencing their availability and subsequent accessibility for consumers seeking Knee implants.

Sales: In the aftermath of notification for fixation on ceiling prices for knee implants, there has been a substantial surge in the sales of knee implants witnessed across various Stakeholders, with 64% of Manufacturers, 57% of importers, 62% of Hospital pharmacies, 58% of Distributors, and 31% of Wholesalers. Notably, Manufacturers have experienced the most significant increase in sales post-notification on ceiling prices for knee implants, marking them as the primary contributors to this escalated demand. This surge implies that Manufacturers have likely streamlined the availability of knee implants in response to increased market needs. While other Stakeholders also saw notable increases, the substantial rise within Manufacturers underscores their critical role in meeting the heightened demand for these essential medical devices, potentially influencing their availability, and ensuring a broader accessibility for consumers seeking knee implants.

Price: Post-notification for fixation on ceiling prices for knee implants, there has been a notable surge in Knee Implants costs witnessed across various Stakeholders, with 10% of importers, 71% of Distributors witnessing a significant increase, 88% of Hospital pharmacies, and 44% of Wholesalers. Remarkably, Hospital pharmacies have experienced the most substantial surge in prices post-notification on ceiling prices for knee implants, indicating their significant impact on the uptick of costs for these crucial medical devices. While Hospital pharmacies may have contributed to enhanced availability by meeting heightened demand, their influence seems to have negatively impacted affordability. The substantial hike in prices by hospital pharmacies implies potential affordability concerns, highlighting the importance of exploring strategies to maintain cost-effectiveness for consumers requiring Knee Implants in the post-notification on ceiling prices.

Quality: Following the impact of notification for fixation on ceiling prices for knee implants, there has been a noticeable improvement in the quality of Knee Implants, notably observed with a 45% of hospital pharmacies witnessed an increase in compared to a minor 2% of manufacturers witnessed an increase in quality. The substantial enhancement in quality within Hospital pharmacies underscores their dedicated efforts to elevate the standards of these critical medical devices post-pandemic. While Manufacturers showed a minimal increase, the considerable surge within Hospital pharmacies suggests a focused endeavour to enhance the reliability and effectiveness of Knee Implants. This advancement in quality within hospital settings implies a potential improvement in the reliability of these devices for patients undergoing procedures. However, assessing availability and affordability warrants further exploration, as increased quality might not directly correlate with accessibility or cost-effectiveness.

Consumer Perspectives on Medical Devices Post-COVID

1. Affordability

- **Below Rs. 50,000 Income**: 40.9% allocate 5-10% of their income to medical devices, indicating a substantial burden for lower-income groups.
- **RS. 50,000 – Rs.100,000 Income**: Higher spending in 5-10% and 10-15% ranges; 42.5% in 5-10% bracket, showing increased commitment to medical expenses.
- **Rs. 100,000 – Rs.200,000 Income**: Peak in 5-10% spending range at 52.1%, indicating prioritization of healthcare expenditures.
- **Rs. 200,000 – Rs. 500,000 Income**: Decrease in 5-10% and 10-15% ranges, suggesting lower allocation to medical devices.
- **Above RS. 500,000 Income**: Decline in spending on medical devices, likely due to access to comprehensive healthcare services.

2. Quality Perception

- **Pre-COVID**: Before COVID, perceptions of medical device quality were varied: 28% deemed them poor, 40% considered them average, and 32% rated them excellent, reflecting a mixed sentiment across rural and urban areas. This diversity in opinions likely stemmed from differing experiences and expectations, highlighting the need for consistent and improved standards across the board.
- **Post-COVID**: There has been a notable shift in perceptions regarding medical device quality, with 19% rating them as poor, 29% as average, and a significant 53% considering them excellent. This substantial increase in the excellent category suggests a marked improvement in consumer satisfaction, indicating potential advancements in device quality, especially in meeting post-pandemic healthcare demands.

3. Availability

- **During COVID-19**: 55% faced difficulties in finding and purchasing; only 12% had no issues; 27% engaged in extensive searches and 6% couldn't find devices at all.
- **Impact of DPCO on TMR Notification**
    - **Rural Areas**: 53% felt impact on availability.
    - **Urban Areas**: Even split, with 50% perceiving impact.

4. Average Prices of six medical devices used by consumers

- **Majority Price Range**: 38% reported ₹2,000 to ₹5,000.
- **Lower Price Range**: 15% found devices below ₹2,000.
- **Mid-Price Range**: 31% indicated ₹5,000 to ₹10,000.
- **Higher Price Range**: 11% between ₹10,000 and ₹20,000; 5% above ₹20,000.

2 Introduction

The pricing of medical devices is a multifaceted and critical aspect of the healthcare industry that directly impacts patient care, healthcare budgets, and the overall healthcare ecosystem. Medical devices encompass a vast array of products, ranging from simple, everyday items like pulse oximeter and thermometers to complex, cutting-edge technologies such as cardiac stents and knee implants. The pricing of these devices is influenced by a complex interplay of factors, including regulatory requirements, market competition, healthcare policies, and economic forces.

The objective of this report is to examine the influence of The Drugs (Price Control) Order, 2013 regulations on medical devices, specifically focusing on pulse oximeters, nebulizers, thermometers, BP monitors, oxygen concentrators, glucometers, cardiac stents, and knee implants, both before and after the COVID-19 pandemic. Additionally, the report aims to delve into critical facets, including the availability, affordability, and quality of these medical devices.

3 Project Background

In pursuit of enhancing India's pharmaceutical industry and cementing its global leadership in the sector, the Department of Pharmaceuticals (DOP), operating under the Ministry of Chemicals and Fertilizers, initiated the 'Strengthening of Pharmaceutical Industry (SPI)' scheme. This scheme, spanning from FY 2021-22 to FY 2025-26, allocates a significant financial corpus of Rs. 5,000 million. Its goal is to fortify the Indian pharmaceutical industry by addressing crucial aspects such as infrastructure development, productivity enhancement, quality assurance, and sustainability.

The SPI scheme aims to propel India onto the international stage as a frontrunner in the pharmaceutical arena. To achieve this, the scheme focuses on several key facets. It includes providing financial assistance to pharmaceutical clusters for creating shared facilities, enabling the upgrading of production capabilities for small and medium-sized enterprises (SMEs) and micro, small, and medium enterprises (MSMEs) to meet stringent international regulatory standards. Additionally, the SPI scheme places significant emphasis on promoting growth within both the pharmaceutical and medical devices Stakeholders by fostering knowledge sharing and awareness programs.

The SPI scheme is structured around three critical components or sub-schemes. The first, "Assistance to Pharmaceutical Industry for Common Facilities (APICF)," is dedicated to boosting the capacity of pharmaceutical clusters. The second, "Pharmaceutical Technology Upgradation Assistance Scheme (PTUAS)," is designed to provide support to MSMEs, aiding them in achieving compliance with regulatory standards. The third, "Pharmaceutical & Medical Devices Promotion and Development Scheme (PMPDS)," is focused on promoting knowledge dissemination and raising awareness within the pharmaceutical and medical technology (MedTech) industries.

For the successful implementation of the SPI scheme, the Small Industries Development Bank of India (SIDBI) has been selected as the Project Management Consultant (PMC) by the Department of Pharmaceuticals. This study aims to assess the impact of The Drugs (Price Control) Order, 2013 (DPCO, 2013), on the prices of essential medical devices such as Cardiac stents, Knee implants, Oxygen Concentrators, Pulse Oximeters, Glucometers, Blood Pressure Monitors, Nebulizers, and Digital Thermometers. The study's primary focus is to evaluate the implications of price control measures on the industry and consumers, particularly in terms of the availability and affordability of these critical medical devices.

3.1 Objective

- The study is on a Pan India level and covers both domestically manufactured and imported products.
- It studies the Impact on availability in all geographical regions, urban/ rural, public/ private health systems and through all channels like pharmacies/ hospitals, etc.
- It studies the Impact on affordability on devices as to impact on out-of-pocket expenses for consumers, especially for vulnerable sections.
- It studies the Impact of price control on medical devices and equipment on the domestic industry and imports.
- The study also covers the impact on product quality, business profitability/sustainability, market competition, further research, and development etc.
- Finally, the study also examines strategies adopted by various business segments in response to (DPCO, 2013) or notifications issued thereunder and impact thereof.

4 Limitations

In the pursuit of conducting a comprehensive study on the "Impact of the Drugs (Price Control) Order, 2013 ,on the price of eight medical devices, on industry and consumers in terms of availability and affordability," data collection efforts were directed towards seven key stakeholders: retailers, consumers, hospitals, manufacturers, distributors, wholesalers, and importers across 20 states encompassing both rural and urban areas.

The achievement of the desired targets in defined geographical areas faced varying levels of difficulty, with some regions requiring more concerted efforts than others.

- Questions regarding pre-COVID information necessitate respondents to depend on memory, thereby limiting the assurance of recall accuracy and its reliability.
- This research utilizes primarily collected data complemented by secondary data sources. While the majority of the information is consistent, discrepancies between our results and secondary data from diverse sources are possible.
- The estimates of both price and quantity concerning diverse medical devices hinge on multiple factors like brand, manufacturer or dealer influence, discounts, and external guidelines. Consequently, while an aggregate summary offers a broad perspective, the responses may not hold statistical significance when examined at a state level.

5 Methodology

The survey was conducted across 20 states and 50 districts. This survey adopted a Computer-Assisted Personal Interviewing (CAPI) approach to collect data from seven distinct stakeholder groups: Consumers (both urban and rural), Retailers/Pharmacies (both urban and rural), Hospitals (both urban and rural), Wholesalers, Distributors, MSMEs/Manufacturers, and Importers.

About 10,210 surveys were conducted to ensure a comprehensive and fair representation, maintaining a consistent ratio of 25% in rural areas and 75% in urban areas within every state. The methodology employed for this survey is outlined as follows:

Selection of States and Districts:

- The survey was conducted across 20 states in India, chosen to ensure a representative sample of the country's geographical and demographic diversity.
- Within each state, specific districts were selected for data collection, totalling 50 districts, ensuring a wide-ranging representation.

Selection of Stakeholders:

- The survey targeted seven different stakeholder groups: Consumers (Urban and Rural), Retailers/Pharmacies (Urban and Rural), Hospitals (Urban and Rural), Wholesalers, Distributors, MSMEs/Manufacturers, and Importers.
- To maintain a 25% rural and 75% urban distribution, the survey sample within each district was stratified based on this urban-rural ratio.

Sample Size Determination:

- The total sample size for the survey was 10,210, and the sample size for each stakeholder group in each state, district, and urban-rural category with an intent to maintain a largely statistically significant sample size.
- The overall sample size for each combination of stakeholder group, state, district, and urban-rural category was designed to represent the population adequately.

Questionnaire:

- Seven different questionnaires were designed for each stakeholder, which cover the objectives of the study.
- Questions consisted of demographic/firmographic, informative, and specific questions related to the availability, price, demand/supply, and quality of each of the eight medical devices.

Data Collection Method:

- Data was collected through CAPI surveys, interviews, face-to-face interviews, and in-depth interviews.
- Data records and interviews were collected and maintained on a real-time basis using SatisACTual - our proprietary survey management software.

5.1 Sample Plan

We were tasked with conducting the study across 20 states, encompassing both rural and urban areas in a predefined ratio of 25:75. The sample distribution was strategically allocated among the selected states, ensuring representation in two distinct areas as per the defined criteria.

5.1.1 Regional Grouping

As part of the scope of work, we were required to perform a regional analysis. Since data was collected across several states, we have regrouped the data to represent five major regions of India. They are as follows.

Region	States
Northern region	Chandigarh, Delhi, Haryana, Punjab.
Eastern region	Bihar, Odisha, West Bengal, Jharkhand.
Central region	Chhattisgarh, Uttar Pradesh, Uttarakhand, Madhya Pradesh.
Western region	Gujarat, Rajasthan, Maharashtra.
Southern region	Andhra Pradesh, Tamil Nadu, Telangana, Karnataka, Kerala.

TABLE 9: REGION WISE STATES

When assessing the overall distribution of respondents, there were states with the lower number of responses, which made it challenging to conduct a meaningful statistical analysis at the state level. Region-wise reporting mitigates this issue by providing a more balanced and evenly distributed dataset. This, in turn, facilitates a clearer and more insightful understanding of the report's findings, ensuring that all regions are adequately represented and contribute to a more holistic perspective on the market.

5.1.2 Sampling

The sample size distribution across all seven stakeholders is as given below.

Stakeholder	South	East	North	Central	West	Total
Consumers	890	510	840	770	540	3,550
Retailers	608	342	915	576	459	2,900
Hospitals	603	243	451	460	227	1,984
Wholesalers	50	40	155	108	218	571
Distributors	50	56	60	106	89	361
MSME's/Manufacturers	45	35	227	90	137	534
Importers	20	10	120	60	100	310
Total	**2,266**	**1,236**	**2,768**	**2,170**	**1,770**	**10,210**

TABLE 10: REGION-WISE SAMPLING FOR EACH STAKEHOLDER

Urban vs. Rural Sample:

- Urban and rural areas within each state and district were classified based on established criteria.
- The 75% urban and 25% rural distribution was maintained in the sample selection within each district.

Detailed sampling plans are provided in the Annexure.

5.2 Data Analysis

Since the data was collected across the entire value chain of suppliers, we conducted an analysis to measure the impact across each of the stakeholder i.e., Manufacturer, Importers, Wholesaler, Distributor, Standalone Pharmacies, Hospital Pharmacies and Consumers. This analysis helps in understanding specific pressure points for supply, price quality, and demand. This horizontal analysis was conducted separately for each medical device and further for each region and split into urban and rural.

Cross-tabulations were performed to identify any Specific regional, geographical, or firmographic biases a significant variation.

Similarly, analysis was also conducted for consumer surveys. In addition to regional, geographic, and demographic analyses, we also conducted analyses to determine the impact on vulnerable Stakeholders.

6 Secondary Analysis

The secondary analysis delves into a comprehensive examination of essential medical devices with a primary focus on assessing the impact of price regulation by the NPPA. This analysis entails a meticulous comparison of the old prices and the revised pricing structures for these critical medical devices. By analysing the changes in pricing, this study aims to shed light on the implications of price regulation on both the accessibility and affordability of essential medical equipment, offering valuable insights into the healthcare landscape.

6.1 Historical Context of Drug (Prices Control) Order (DPCO)

The Drug (Prices Control) Order (DPCO) is established under Section 3 of the Essential Commodities Act, 1955, with the primary goal of ensuring that essential drugs are accessible to the public at reasonable prices. Its origins can be traced back to the aftermath of the 1962 Sino-Indian war when pharmaceutical companies began to excessively profit from drug sales. The DPCO was introduced to curb rising drug prices and protect the interests of the public. Over the years, it has undergone five revisions.

In 1995, India introduced the Drug (Prices Control) Order (DPCO) 1995, which covered 74 bulk drugs and their formulations. However, this move did not yield the desired results as many drug manufacturers shifted their production to other countries, leading to the discontinuation of numerous products, including critical medicines like penicillin, which moved production to China.

The government established the National Pharmaceutical Pricing Authority (NPPA) in 1997 to address these issues. The NPPA was tasked with enforcing the provisions of the DPCO, setting, and revising drug prices, and monitoring prices of controlled and decontrolled drugs.

On December 7, 2012, the National Pharmaceutical Pricing Policy-2012 was introduced. Key aspects of NPPP-2012 included price regulation based on the essentiality of drugs specified in the National List of Essential Medicines (NLEM)-2011, regulating prices of drug formulations only, and determining the ceiling price of formulations using Market-Based Pricing (MBP).

The history of the Drug Price Control Order shows a gradual shift towards deregulation of drug prices in India. Before 1970, India's pharmaceutical industry was underdeveloped, with most drugs being imported. The first price controls were imposed in 1962 due to concerns about rising drug prices during the Sino-Indian War. The 1970 DPCO imposed a profitability limit of 15% on pharmaceutical companies' pre-tax profits, with multinational corporations (MNCs) being less affected by these controls. The Hathi Committee in 1974 recommended a greater role for the public sector in drug manufacturing.

In 1979, the DPCO introduced ceiling prices for controlled bulk drugs and formulations, which significantly impacted MNCs, leading to discontinued products and reduced profitability for the Indian pharmaceutical sector. The Kelkar Committee in 1984 recommended excluding certain drugs from price control to promote growth.

In 1987, the DPCO reduced the number of controlled drugs and raised the Maximum Allowable Post Manufacturing Expenses (MAPE). The 1994 Drug Policy further liberalized criteria for price control selection and abolished industrial licensing for bulk drugs. DPCO 1995 continued to liberalize price control, reducing the number of controlled drugs, and changing pricing methodologies for bulk drugs and formulations.

6.2 Overview of the Drugs (Prices Control) Order (DPCO), 2013

The Drug (Prices Control) Order (DPCO) is a government regulation aimed at ensuring that essential pharmaceuticals are accessible to the public at reasonable prices. Pharmaceuticals are vital for our well-being and should be affordable for everyone. This order was introduced in the 1970s with the aim of controlling the profitability of pharmaceutical companies, which, in turn, would promote cost-effective production at economically viable scales. It stands as a vital regulation for the well-being of society and for steering the pharmaceutical industry in a responsible direction.

6.2.1 DPCOs Objectives

- To ensure the availability of essential life-saving, and prophylactic medicine of good quality at reasonable prices.
- The (DPCO, 2013) aims to regulate the prices of essential medicines to make them affordable and accessible to the general public. It seeks to ensure that the prices of these medicines remain reasonable and do not pose a financial burden on patients.
- The order also indirectly supports quality control by setting price caps based on certain standards, including those specified in the Indian Pharmacopoeia.
- The DPCO seeks to strike a balance between the interests of consumers who need affordable medicines and pharmaceutical companies that need incentives for research and development.
- The DPCO promotes transparency in drug pricing by specifying how prices should be calculated and monitored, making the pricing process more predictable and understandable for all stakeholders.
- To keep up with changing medical needs and market dynamics, the DPCO is subject to periodic reviews and adjustments to ensure that it remains responsive to evolving healthcare requirements.

6.2.2 Regulatory Bodies and their Roles

The Drugs (Price Control) Order, 2013 is a regulatory framework in India that governs the prices of essential medicines to ensure their affordability and accessibility to the general public. It was introduced by the Government of India to control and regulate the prices of pharmaceutical products. Several regulatory bodies play crucial roles in the implementation and enforcement of the (DPCO,2013). These bodies work collectively to monitor drug prices, fix price ceilings, and ensure compliance with the order.

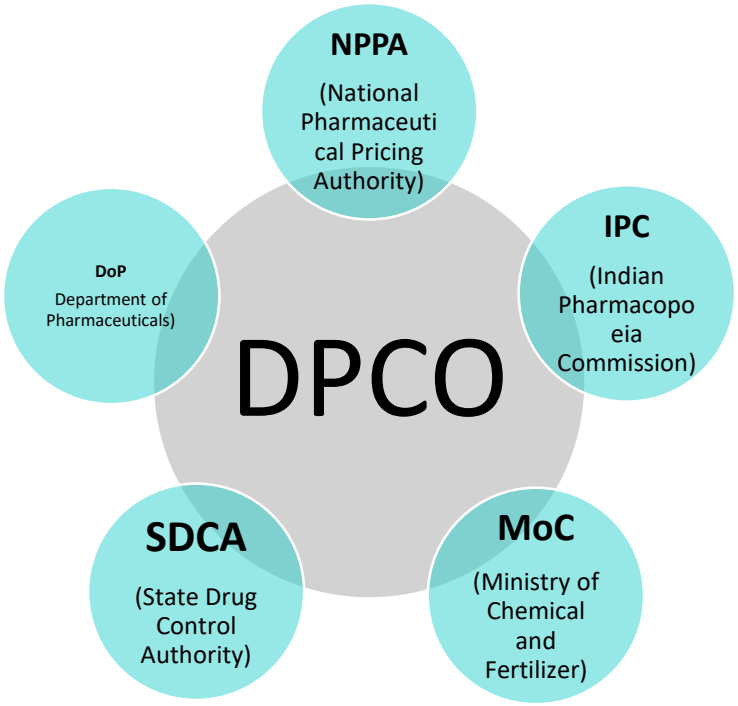


FIGURE 1: DPCO REGULATORY BODIES

National Pharmaceutical Pricing Authority (NPPA)

The National Pharmaceutical Pricing Authority (NPPA) is a pivotal regulatory body in India entrusted with a significant role in the implementation and enforcement of the Drugs (Prices Control) Order (DPCO, 2013). As an autonomous organization under the Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, the NPPA is responsible for regulating the prices of pharmaceutical products to ensure affordability and accessibility to the public.

One of the primary roles of the NPPA is to fix and revise the maximum allowable prices (ceiling prices) of essential medicines listed under the (DPCO, 2013). It achieves this by carefully assessing factors such as market dynamics, and the interests of both consumers and pharmaceutical companies. The NPPA also monitors and enforces compliance with these price regulations, acting against any violations or instances of overpricing.

In accordance with the (DPCO, 2013), the government has imposed a limit on the trade margin for (i) Pulse Oximeter, (ii) Blood Pressure Monitoring Machine, (iii) Nebulizer, (iv) Digital Thermometer, (v) Glucometer at the initial point of sale of the product (referred to as Price to Distributor), and instructs manufacturers to establish the Maximum Retail Price as outlined as follows:

Maximum Retail Price = Price to Distributor(PTD)+ (PTD*TM) +Applicable GST
Where TM = Trade Margin not exceeding 70%.

The NPPA plays an essential role in preventing the arbitrary and excessive pricing of essential drugs, thus safeguarding public health by ensuring that crucial medications remain within reach for all sections of society.

Function of National Pharmaceutical Pricing Authority

1. To implement and enforce the provisions of the Drugs (Prices Control) Order in accordance with the powers delegated to it.
2. To deal with all legal matters arising out of the decisions of the Authority.
3. To monitor the availability of drugs, identify shortages, if any, and to take remedial steps.
4. To collect/ maintain data on production, exports and imports, market share of individual companies, profitability of companies etc., for bulk drugs and formulations.
5. To undertake and/ or sponsor relevant studies in respect of pricing of drugs/ pharmaceuticals.
6. To recruit/ appoint the officers and other staff members of the Authority, as per rules and procedures laid down by the Government.
7. To render advice to the Central Government on changes/ revisions in the drug policy.
8. To render assistance to the Central Government in the parliamentary matters relating to the drug pricing.

Department of Pharmaceuticals (DoP)

The Department of Pharmaceuticals (DoP) in India plays a significant role as a regulatory body in the context of the Drugs (Price Control) Order, 2013 . As a part of the Ministry of Chemicals and Fertilizers, the DoP is responsible for the formulation of policies and coordination related to the pharmaceutical sector, including the pricing of essential medicines.

One of the key roles of the DoP is to provide policy guidance and support for the effective implementation of the (DPCO ,2013). It collaborates with key regulatory bodies such as the National Pharmaceutical Pricing Authority (NPPA) to ensure that the pricing regulations are properly enforced. The DoP also contributes to shaping the pharmaceutical pricing policies to strike a balance between making essential medicines affordable for the general public while encouraging pharmaceutical companies to invest in research and development for innovation.

The Department of Pharmaceuticals actively engages with various stakeholders, including the pharmaceutical industry, healthcare providers, and the public, to gather insights and feedback that can inform policy decisions related to drug pricing and availability. It participates in discussions, reviews, and adjustments to the DPCO, keeping it relevant and responsive to the evolving healthcare needs of India.

Ministry of Chemicals and Fertilizers

The Ministry of Chemicals and Fertilizers is a significant regulatory body in India concerning the Drugs (Price Control) Order, 2013. This ministry plays a vital role in overseeing and providing regulatory oversight for the implementation of drug pricing policies, including the DPCO, in the country.

One of the primary roles of the Ministry of Chemicals and Fertilizers is to ensure that the objectives of the (DPCO ,2013) are effectively achieved. This includes monitoring and regulating drug prices to make essential medicines affordable and accessible to the general public. The ministry collaborates with key regulatory bodies such as the National Pharmaceutical Pricing Authority (NPPA) and the Department of Pharmaceuticals (DoP) to create a comprehensive regulatory framework for pharmaceutical pricing.

The ministry also works on policy formulation and coordination within the pharmaceutical sector. It aims to strike a balance between the interests of consumers, who require affordable medicines, and pharmaceutical companies, which need incentives to invest in research and development.

State Drug Control Authorities

State drug control authorities regulate and oversee the manufacturing, distribution, and sale of medical devices within their respective states. While the primary focus of these authorities is often on pharmaceuticals and drugs, they often have jurisdiction over medical devices as well, especially those that are closely related to pharmaceuticals, such as drug delivery devices or certain diagnostic tools. These authorities operate within each Indian state and Union Territory and play a significant role in ensuring that the DPCO's pricing regulations are effectively enforced and followed. State Drug Control Authorities work in close coordination with the National Pharmaceutical Pricing Authority (NPPA) and the central government to oversee the pricing of essential medicines. This includes verifying that pharmaceutical companies adhere to the price ceilings set by the (DPCO ,2013) and acting against any instances of price violations or overcharging.

State Drug Control Authorities also play a crucial role in inspections and quality control checks of pharmaceutical manufacturing units and distribution channels within their jurisdictions. This ensures that drugs available in the market meet the required quality and safety standards, contributing to public health and safety.

Indian Pharmacopoeia Commission (IPC)

The Indian Pharmacopoeia Commission (IPC) is an important regulatory body in India with a significant role related to the Drugs (Price Control) Order, 2013 . The IPC is responsible for setting and maintaining pharmaceutical standards and specifications for drugs and pharmaceutical formulations in India.

The Indian Pharmacopoeia Commission (IPC) is responsible for setting standards for drugs in India. The IPC's main functions include:

- Regularly updating drug standards
    - The IPC publishes the Indian Pharmacopoeia (IP) regularly, which is a collection of official documents that update or add new monographs to improve the quality of medicines.
- Developing IP Reference Standards
    - The IPC develops IP Reference Standards (IPRS) and Impurities for the quality control analysis of drugs.
- Promoting the rational use of generic medicines
    - The IPC publishes the National Formulary of India to promote the rational use of generic medicines.
- Protecting the public
    - Pharmacopoeia commissions are responsible for protecting the public from error, ignorance, or fraud in medicines. They do this by defining the standards that substances must comply with when offered for medicinal use.

6.3 Medical devices

Eight medical devices were studied which includes Cardiac stents, Knee implants, Oxygen concentrators, Pulse oximeter, Glucometer, BP Monitor, Nebulizer and Digital Thermometer.

6.3.1 Pulse Oximeter

Global Market Size:

In 2022, the global pulse oximeter market reached a value of approximately $2.4 billion and is projected to exhibit a compound annual growth rate (CAGR) of 6.4% from 2023 to 2028. The primary driver for this growth is the increasing prevalence of respiratory conditions such as asthma, COPD, and others worldwide. (Grand View Research, 2021)

Domestic Market Size and CAGR:

The Indian pulse oximeter market is expected to grow at a CAGR of over 0.50% during the forecast period of 2018 to 2028. This substantial growth is attributed to rising awareness about the various applications of pulse oximeters, especially during the COVID-19 pandemic. The market size in India was valued at USD 79.44 million in 2022. (TechSci Research, 2022)

Impact of COVID-19:

The COVID-19 pandemic led to a surge in demand for essential life-saving medical devices, including oximeters, as they are crucial for monitoring oxygen levels in individuals affected by the virus. With COVID-19 primarily affecting the respiratory system and causing a drop in oxygen levels, the demand for oximeters increased significantly and is expected to continue growing in the foreseeable future.

Regional Landscape:

The pulse oximeter market in India is segmented into five regions: North, East, Central, South, and West, among them the western region, including Mumbai, saw a dominant demand for oximeters in 2020 when the COVID-19 pandemic was spreading rapidly. Mumbai, in particular, was heavily impacted, leading to a substantial increase in the demand for oximeters. Other cities in the western region, such as Gujarat and Nagpur, also experienced high demand due to the pandemic, contributing to overall market growth.

Research and Development:

Recent research and development activities in the field of pulse oximeters have focused on enhancing their capabilities and usability. Innovations include the expansion of oximetry applications beyond oxygen saturation measurements to include the monitoring of additional blood parameters like methaemoglobin and carboxyhaemoglobin. Advances in signal processing have been made to improve accuracy, particularly in low signal-to-noise situations. Efforts have also been directed toward developing portable and user-friendly pulse oximeters, allowing for self-monitoring by patients, especially in the early stages of chronic obstructive pulmonary disease. Furthermore, researchers are exploring ways to simplify the complexity of pulse oximeter devices, making them more accessible and effective for a broader range of users.

Key Companies:

Prominent companies operating in the Indian pulse oximeter market include India Medtronic Private Limited, Opto Circuits India Ltd., Wipro GE Healthcare Pvt. Ltd., Philips Healthcare India, Masimo Medical Technologies India Pvt. Ltd, Smiths Medical India Pvt Ltd., Welch Allyn India, Spacelabs

Healthcare (OSI Systems Pvt. Ltd.), Nihon Kohden India Pvt. Ltd, and Contec Medical Systems India Pvt Ltd.

6.3.2 Glucometer

Global Market Size:

The global glucometer market, valued at USD 15.80 billion in 2022, is projected to surge to USD 17.03 billion by 2028, demonstrating a robust compound annual growth rate (CAGR) of 9.9% during the forecast period. The dominance of the continuous glucose monitoring devices segment in the glucometer market can be attributed to technological advancements that have led to the development of innovative products for various medical applications. (DBMR, 2023)

Domestic Market Size:

The India Glucose Monitoring Devices Market, estimated at USD 366.53 Million in 2023, is poised for remarkable growth with a projected CAGR of 7.08% through 2029. This market encompasses the entire ecosystem related to the development, production, distribution, and sale of devices used for the precise measurement and continuous monitoring of blood glucose levels. (TechSci Research, n.d.)

Regional Landscape:

The pulse oximeter market in India is segmented into five regions: North, East, Central, South, and West, among them Western region of India, primarily led by states like Maharashtra and Gujarat, is poised to exert significant influence over the Glucose Monitoring Devices Market. This can be attributed to several factors, including a higher incidence of diabetes, a more developed healthcare infrastructure, and growing awareness about the importance of self-monitoring glucose devices among the population in these states. Consequently, these regions are expected to witness greater adoption of glucose monitoring devices, fuelling substantial market growth.

Furthermore, the Western region of India has been at the forefront of healthcare technological advancements, with major cities like Mumbai and Ahmedabad serving as hubs for medical research and innovation. This has facilitated the introduction of cutting-edge glucose monitoring devices known for enhanced accuracy, convenience, and ease of use. Additionally, state governments' initiatives to promote diabetes management and control have contributed to market growth, encompassing awareness campaigns, subsidized healthcare services, and specialized diabetes care centres. With the rising prevalence of diabetes and a growing focus on proactive healthcare management, the demand for glucose monitoring devices is poised to surge in Western India, presenting lucrative opportunities for manufacturers and suppliers to cater to a large and expanding consumer base.

Key Market Players:

Prominent players in the Indian glucometer market include Roche Diagnostics India Pvt. Ltd., Abbott India Ltd., Becton Dickinson Pvt. Ltd., ARKRAY Healthcare Pvt. Ltd., B. Braun Medical (India) Pvt. Ltd., Johnson & Johnson Ltd., India Medtronic Private Ltd., Pulsatom Health Care Pvt. Ltd., Bio-Rad laboratories India Pvt. Ltd.

Impact of COVID-19:

The COVID-19 pandemic heightened the risk for hospitalizations and complications among diabetic patients, necessitating close monitoring of blood glucose levels to maintain optimal glycaemia. Diabetes technology played a crucial role in managing hyperglycaemia and hypoglycaemia in hospitalized patients during the pandemic, resulting in improved outcomes and safety. The adoption

of technology such as cellular-connected blood glucose meters, which automatically upload data to secure cloud-based databases, offered real-time monitoring and support to patients, particularly those with poorly controlled Type 2 diabetes, thereby enhancing the market's growth prospects.

Research and Development:

Recent advancements in glucometer technology have led to the development of cutting-edge devices that offer enhanced functionality and connectivity. One notable innovation is the integration of cellular connectivity in glucometers, enabling automatic data transmission of Self-Monitoring of Blood Glucose (SMBG) readings to secure cloud-based databases. This breakthrough has revolutionized the sharing and monitoring of SMBG data, allowing for real-time tracking and analysis of blood glucose levels. Real-time monitoring presents significant opportunities for delivering timely support to patients, particularly those who exhibit abnormal SMBG readings. This capability is particularly valuable for individuals with poorly controlled Type 2 Diabetes (T2D), as it provides them with the additional support necessary to improve critical health outcomes. These technological advancements are poised to play a pivotal role in enhancing the glucometer market's prospects in the years ahead, offering both healthcare providers and patients greater insights and tools for managing diabetes effectively.

6.3.3 BP Monitor

Global Market Size:

The global Blood Pressure Monitoring Devices Market is poised for substantial growth, with expectations to increase from USD 4.5 billion in 2023 to USD 7.22 billion by 2028, reflecting a robust compound annual growth rate (CAGR) of 10.32% during the forecast period spanning from 2023 to 2028. (Grand View Reserach, 2021)

Domestic Market Size:

According to "India Blood Pressure Monitoring Device Market Overview, 2028," a report published by Bonafide Research, the India Blood Pressure Monitoring Device market is set to experience impressive growth with a projected CAGR of more than 14% from 2023 to 2028. India grapples with a significant and escalating prevalence of hypertension, a chronic condition affecting a substantial portion of the population, thereby driving the demand for regular blood pressure monitoring. The risk of hypertension increases as the population ages, leading to a growing need for frequent blood pressure monitoring among the elderly demographic. The Indian government has initiated various healthcare initiatives aimed at enhancing healthcare service accessibility, often accompanied by awareness campaigns about hypertension and the importance of routine monitoring. The urbanization trend and evolving lifestyles have heightened risk factors for hypertension, including unhealthy diets, sedentary routines, and increased stress levels, necessitating consistent monitoring. The National Health Mission, a flagship program of the Indian government, endeavours to provide accessible, affordable, and high-quality healthcare to all citizens. (Bonafide Research, 2023)

Impact of COVID-19:

The clinical impact of Blood Pressure Variability (BPV) was substantial in COVID-19 patients with hypertension, significantly correlating with in-hospital mortality. Patients with COVID-19 and hypertension experienced frequent blood pressure fluctuations, particularly impacting those with advanced age and systemic inflammation. The challenges of measuring blood pressure during the COVID-19 pandemic disrupted normal care for managing chronic diseases, including hypertension, due to changes in the availability of face-to-face healthcare in family practices. These factors underscore the significant impact of COVID-19 on the blood pressure monitoring devices market.

Key Market Players:

In the realm of blood pressure monitoring devices, several prominent companies play a pivotal role. These industry leaders include A&D Medical Inc., American Diagnostics Corporation, Withing's, General Electric Company (GE Healthcare), and Omron Healthcare Inc. These companies are at the forefront of developing cutting-edge technologies and innovative solutions that cater to the growing demand for accurate and efficient blood pressure monitoring worldwide. Their contributions drive advancements in healthcare and ensure that individuals can effectively manage their blood pressure for better overall health.

Research and Development:

Recent research and development (R&D) activities in the field of blood pressure monitoring have been focused on advancing the accuracy, convenience, and accessibility of blood pressure monitoring devices. Innovations include the integration of wearable technology and mobile applications, which enable users to monitor their blood pressure continuously and receive real-time data and insights. Additionally, R&D efforts have been directed towards improving the usability of blood pressure cuffs, making them more comfortable and less cumbersome for users. Furthermore, there is a growing emphasis on telemedicine and remote monitoring solutions, allowing healthcare providers to remotely track and manage patients' blood pressure readings, particularly in the context of the COVID-19 pandemic.

6.3.4 Nebulizer

Global Market Size:

The global nebulizer market is anticipated to experience a robust growth trajectory, increasing from USD 1.07 billion in 2022 and 1.99 billion USD in 2023 and to a projected USD 2.85 billion by 2028. This growth is forecasted at a steady compound annual growth rate (CAGR) of 5.9% during the period spanning 2023 to 2030. (Grand View Reserach, 2021)

Domestic Market Size:

According to a report titled "Nebulizers Market - Growth, Industry Analysis, Volume, Size, Forecast, Trends," published by Transparency Market Research, the Indian nebulizer market has witnessed remarkable growth, surging from USD 6.91 Million in 2014 to a substantial USD 56.46Million in 2023. This impressive expansion has been driven by a compelling compound annual growth rate (CAGR) of 25.8% between 2015 and 2023. (Transparency Market Research, 2016)

Regional Landscape:

The nebulizer market in India is segmented into five regions: North, East, Central, South, and West. In 2014, the North emerged as the dominant market leader, capturing a notable market share of 35.10%. The prevalence of acute respiratory diseases and chronic obstructive pulmonary disorders, exacerbated by rising pollution levels, has spurred the demand for nebulizers in this region. Analysts predict a gradual but consistent increase in demand, with a CAGR of 27.50% anticipated from 2014 to 2023, ensuring the continued dominance of the North.

The East zone has also exhibited a heightened demand for nebulizers. According to the West Bengal Department of Environment, a staggering 70% of Kolkata's population suffers from various respiratory conditions due to severe environmental pollution. As pollution levels continue to rise, the prevalence

of respiratory ailments in this region is projected to witness a significant upswing, further boosting the demand for nebulizers.

Impact of COVID-19:

The COVID-19 pandemic has exerted a profound influence on the Indian nebulizer market. Given the virus's primary impact on the respiratory system, individuals experiencing respiratory distress sought nebulizers as a vital means to administer medications and alleviate breathing difficulties. Hospitals and healthcare facilities faced an increased demand for nebulizers to treat COVID-19 patients, while there was also a surge in home use as people sought to mitigate the risk of hospitalization. Consequently, nebulizer sales and related accessories experienced substantial growth. Moreover, the pandemic accelerated the adoption of telehealth services, facilitating remote monitoring of nebulizer usage and contributing to the rise of connected nebulizers and digital health solutions within the Indian market.

6.3.5 Digital Thermometer

Global Market Size:

The global digital thermometer market reached a valuation of USD 757.81 million in 2021 and is poised for substantial growth, with projections indicating it will reach USD 1.3 billion by 2028. This growth trajectory entails a notable compound annual growth rate (CAGR) of 5.6% from 2022 to 2028. (Allied Market reserach, 2022)

Domestic Market Size:

On the domestic front, the Indian thermometer market is poised for substantial growth, with an anticipated CAGR of 9.90% during the forecast period spanning from 2023 to 2030. By the year 2028, it is predicted to amass a total revenue of USD 108.93 million. (Inkwood Research, n.d.)

Impact of COVID-19:

The third wave of the COVID-19 pandemic has played a significant role in the expansion of the digital thermometer market, as observed by industry analysts globally. Additionally, the increasing demand for mercury-free thermometers is expected to further boost market growth during the coming year. The necessity for vital sign equipment that aids in monitoring and detecting symptoms of infectious diseases has become more critical than ever over the past decade due to the prevalence of pandemics such as swine flu and ebolavirus.

Key Market Players:

Key players in the India thermometer market include OMRON Healthcare Inc, Hicks Thermometers (India) Ltd, IndoSurgicals Private Limited, and others. These companies play a pivotal role in meeting the growing demand for advanced and accurate thermometers, thereby contributing to the overall health and well-being of individuals.

6.3.6 Oxygen Concentrator

Global Market Size:

The global oxygen concentrators market, estimated at USD 3.5 billion in 2023, is poised for significant growth with a projected compound annual growth rate (CAGR) of 5.3% from 2024 to 2028. This expansion can be attributed to the increasing prevalence of respiratory disorders such as chronic obstructive pulmonary disease (COPD), asthma, and sleep apnea, alongside the continuous introduction of technologically advanced devices. According to the Global Impact of Respiratory

Disease study, approximately 200 million individuals worldwide suffer from COPD, leading to 3.2 million annual deaths. Moreover, the growing preference for home-based therapy is expected to be a key driver of market growth between 2024 and 2028. (Grand View Reserach, 2022)

Domestic Market Size:

The oxygen concentrator market in India, valued at USD 102.63 million in 2023, is poised for remarkable growth with an anticipated CAGR of 6.02% within the forecast period of 2025 to 2029. This thriving and rapidly expanding industry encompasses the production, distribution, and sale of oxygen concentrators within the country. These innovative and life-saving devices play a pivotal role in healthcare by extracting, purifying, and concentrating oxygen from the surrounding air, ensuring a continuous and reliable supply of high-quality oxygen for patients in need. The surging demand for reliable and efficient oxygen therapy has led to substantial growth, attracting not only local manufacturers but also international players and investors who recognize the immense potential and opportunities in this sector. The rising prevalence of respiratory disorders, coupled with the need for portable and cost-effective oxygen delivery systems, has further fuelled market expansion. (Medium, 2023)

Regional Landscape:

The pulse oximeter market in India is segmented into five regions: North, East, Central, South, and West, among them the northern region of India, particularly the Delhi National Capital Region (NCR), currently exerts significant dominance in the oxygen concentrator market. Several factors contribute to this, including exceptionally high population density in the region and the resulting surge in medical requirements due to recent health crises. Moreover, the region's advanced healthcare infrastructure plays a pivotal role in the growth of the oxygen concentrator market. With state-of-the-art hospitals and medical facilities, the northern region ensures efficient and timely access to critical care equipment like oxygen concentrators. This availability of top-tier healthcare resources enhances the region's reputation as a hub for medical advancements and technological innovations. Additionally, the presence of renowned medical research institutions in the northern region further solidifies its position as a leader in the industry. These institutions, combined with the expertise of highly skilled healthcare professionals, drive continuous progress in the field of medical technology.

Impact of COVID-19:

The rapid spread of the coronavirus pandemic has led to a surge in demand for essential medical equipment. The potential for severe respiratory symptoms, including poor oxygen levels in patients' bloodstream, has heightened the need for portable oxygen concentrators. Their effective applications in both home and hospital settings are contributing to increased adoption rates and revenue. Manufacturers are focusing on optimizing supply and distribution channels to overcome potential challenges posed by lockdown measures imposed in multiple countries.

Research and Development:

Significant technological advancements have propelled the market's growth, enhanced the efficiency of oxygen delivery, and improved the overall user experience. Portable oxygen concentrators (POCs) now incorporate sophisticated sensors and algorithms to ensure precise oxygen delivery, adapting to users' needs in real-time. Additionally, the integration of wireless connectivity has enabled remote monitoring, allowing healthcare professionals to track patients' progress and adjust treatment plans accordingly.

Key Market Players:

Prominent companies operating in the Indian oxygen concentrator market include Philips India Limited, BPL Medical Technologies Private Ltd, Nidek Medical India Private Ltd, Sanrai Med India, GCE India, Kannu Impex (India), Monarch Medtech, Medikart Healthcare Systems, Technocare Medisystems, and GPC Medical Limited.

6.3.7 Cardiac Stents

Global Market Size:

The global coronary stents market size was estimated at USD 9.32 billion in 2022 and is expected to grow a compound annual growth rate (CAGR) of 3.1% from 2023 to 2030. (Grand View Reserach, 2021)

Domestic Market Size:

The India stent market, estimated at USD 309.6 million in 2022, is set for impressive expansion during the forecast period from 2023 to 2029, with a projected CAGR of 4.76%. By 2029, it is expected to reach a value of USD 426.49 million. Key drivers of growth in the India stent market include a rising number of cardiovascular disease patients and an increasing demand for minimally invasive surgical procedures. (BlueWeave Consulting, 2023)

Impact of COVID-19:

The COVID-19 pandemic had adverse effects on the stent market in India. The healthcare system was strained, with a focus on treating COVID-19 patients, leading to a decline in elective procedures like angioplasty. Temporary hospital and clinic closures during lockdowns further contributed to decreased stent procedures. Supply chain disruptions and restrictions on goods' movement also affected stent availability. However, the Indian government took measures to mitigate the pandemic's impact on healthcare, including infrastructure expansion, increased healthcare spending, and telemedicine regulation relaxations. As the country emerges from the pandemic, a backlog of postponed stent procedures is expected, potentially driving market growth in the coming years.

Research and Development:

Drug-eluting stents (DES) have been developed to prevent excessive neointima growth by delivering antiproliferative drugs to the target lesion. DES typically consist of a metallic stent, a polymer coating, and an antirestenotic medication incorporated into the polymer, released over weeks to months' post-implantation. DES are preferred for percutaneous coronary intervention due to their lower risk of target vessel revascularization compared to bare-metal stents and other types. Major DES systems available include XIENCE from Abbott, SYNERGY DES from Boston Scientific, Cre8 EVO from Alvimedica, and Resolute Onyx DES from Medtronic Plc. The presence of these market players is expected to contribute to market growth by increasing product availability.

Key Market Players:

Prominent players in the India stent market include Abbott Laboratories, B. Braun Melsungen AG, Biosensors International Group, Biotronik SE & Co. KG, Boston Scientific Corporation, Elixir Medical Corporation, Medtronic Plc, Stryker, and MicroPort Scientific Corporation. These companies employ various strategies, including mergers, acquisitions, partnerships, joint ventures, license agreements, and new product launches, to enhance their market share.

6.3.8 Knee Implants

Global Market Size:

The global knee implants market size was valued at USD 11.1 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 5.8% from 2023 to 2030. (Grand View Research, 2021)

Domestic Market Size:

In the Indian orthopaedic implants market, the current valuation stands at approximately equivalent to USD 168 Million Forecasts indicate that the overall market is set to experience robust annual growth, estimated to be around 20% between 2017 and 2020, primarily driven by the growth in the knee segment. This growth rate is expected to moderate to approximately 13% between 2020 and 2025, ultimately stabilizing at around 10% by 2030. (Sathguru, 2016)

Impact of COVID-19:

The knee replacement market has faced challenges due to the impact of the COVID-19 pandemic. The pandemic imposed additional hurdles for patients with disabilities, particularly with the constraints on non-elective procedures and surgeries in many hospitals due to social distancing measures. As a response, hospitals turned to video conferencing to assist patients with disabilities, mitigating the limitations on market growth.

The disruption in the supply chain during the pandemic, including delays in the delivery of essential components required for knee replacement device manufacturing, had adverse effects on the knee replacement market. Several issues were encountered, such as bottlenecks in trucking, delays at port checkpoints affecting deliveries, export bans in various countries, limited operational manufacturing units, a shortage of healthcare workers for transportation and production, and challenges in ensuring a steady supply of medical devices to patients. Nevertheless, companies have implemented specific measures to ensure the uninterrupted supply of these critical products to patients.

Key Market Players:

The key market players for knee implants in India are Kaushik Orthopaedic Pvt Ltd., Kaykay Industries, Akshar Pharma, Infinity Ortho, Giaplus Medical Private Limited, Autus Healthcare and Models Mall.

6.4 Relevant notifications and amendments of (DPCO ,2013)

- The Drugs (Price Control) Order, 2013 was initially issued in May 2013 to regulate the prices of essential medicines in India. It included a list of essential medicines and specified the methodology for calculating prices.
- The NLEM is a key component of DPCO, as it forms the basis for price regulation. Periodically, the government updates the NLEM to include new medicines and remove obsolete ones.
- The NLEM 2022 contains 384 medicines, compared to 376 medicines in NLEM 2015. The NLEM 2022 had 34 medicines added and 26 medicines deleted, while the previous list had 106 medicines added and 70 medicines were deleted. Out of the 384 medicines listed in the NLEM 2022, 342 appear in a single therapeutic category, 41 drugs in two therapeutic categories, 11 appear in three therapeutic categories and four drugs appear in four therapeutic categories.
- The government periodically issues notifications to revise the ceiling prices of essential medicines based on changes in the Wholesale Price Index (WPI) or other relevant factors.
- The government has established and announce separate maximum prices for medications like injections or inhalers, which are not explicitly listed with their dosage forms or strengths in the

Schedule-I of the Drugs (Prices Control) Order, 2013. This determination considers factors such as packaging type, pack size, dosage compliance, and the content in the pack, whether it is in liquid, gaseous, or any other form, as long as it adheres to the standards set by the Indian Pharmacopeia or other regulations specified in the Drugs and Cosmetics Act, 1940, and its associated rules.

- The National Pharmaceutical Pricing Authority (NPPA) has invoked extraordinary powers in public interest, under Para 19 of the Drugs (Prices Control) Order, 2013 to bring 42 non-scheduled anti-cancer drugs under price control through trade margin rationalisation, an official release said.
- In 2020, the government issued a notification to include orphan drugs and orphan drug-based formulations in the list of scheduled formulations, subject to price control.
- In 2020, amendments were made to the DPCO to include medical devices such as face masks and hand sanitizers under price control during the COVID-19 pandemic to ensure their availability at reasonable prices.

6.4.1 TMR notification of 6 medical devices issued, 2021

- In June 2021, the National Pharmaceutical Pricing Authority (NPPA) invoked the provisions of the Drugs (Price Control) Order, 2013 to oversee the pricing of Oxygen Concentrators. Under the Trade Margin Rationalisation Approach, the Government applied a cap on the trade margin of Oxygen Concentrators at the first point of sale of the product, referred to as the Price to Distributor. Manufacturers were directed to establish the Maximum Retail Price (MRP) of non-scheduled Drug Oxygen Concentrators.
- In July 2021, the National Pharmaceutical Pricing Authority (NPPA) invoked the provisions of the Drugs (Price Control) Order, 2013 to oversee the pricing of (i) Pulse Oximeter, (ii) Blood Pressure Monitoring Machine, (iii) Nebulizer, (iv) Digital Thermometer, (v) Glucometer. Under the Trade Margin Rationalisation Approach, the Government applied a cap on the trade margin of Oxygen Concentrators at the first point of sale of the product, referred to as the Price to Distributor. Manufacturers were directed to establish the Maximum Retail Price (MRP) of non-scheduled Drug Oxygen Concentrators using the following formula –

Maximum Retail Price = Price to Distributor(PTD)+ (PTD*TM) +Applicable GST

Where TM = Trade Margin not exceeding 70%.

6.4.2 Ceiling Price fixation of Coronary Stents

In January 2017, the National Pharmaceutical Pricing Authority (NPPA) implemented the provisions outlined in the Drugs (Price Control) Order, 2013 to establish ceiling prices for coronary stents. This directive aimed to regulate the pricing of coronary stents, a critical medical device used in cardiac interventions, ensuring affordability and accessibility to patients in need. The pricing calculation for determining the ceiling price of coronary stents was carefully structured, reflecting the NPPA's commitment to balancing the interests of patients, healthcare providers, and manufacturers. By invoking the DPCO, the NPPA sought to address concerns related to the cost burden of essential medical treatments, particularly in the context of cardiac care where stents play a pivotal role. This regulatory action underscores the government's efforts to maintain equitable access to healthcare services and mitigate financial barriers for patients requiring coronary interventions. Through the establishment of ceiling prices, the NPPA endeavours to promote transparency and fairness in the pricing of coronary stents, thereby enhancing the overall accessibility and affordability of crucial medical treatments for cardiac patients across the country.

a) Average of price to distributors(PTD)/Price to stockiest (PTS) +16% Retailer Margin, if applicable

b) CGHS prices +10% increase per annum as applicable in case of non-scheduled drugs
c) Cost of Production (CoP)+35% Trade margin for domestic manufactured stents
d) Landed Cost (LC) +35% trade margin for imported stents
e) Average of (CGHS+PTD/PTS) +16% Retailer margin, if applicable
f) Average of Price to Hospital (PTH) +16% Retailer margin, if applicable

6.4.3 Ceiling Price fixation of Orthopaedic Knee Implant System

In August 2017, the National Pharmaceutical Pricing Authority (NPPA) implemented the provisions outlined in the Drugs (Price Control) Order, 2013 to establish ceiling prices for orthopaedic knee implant systems. This directive aimed to regulate the pricing of orthopaedic knee implant systems, critical medical devices used in orthopaedic surgeries, ensuring affordability and accessibility to patients in need. The pricing calculation for determining the ceiling price of orthopaedic knee implant systems was carefully structured, reflecting the NPPA's commitment to balancing the interests of patients, healthcare providers, and manufacturers. By invoking the DPCO, the NPPA sought to address concerns related to the cost burden of essential orthopaedic treatments, particularly in the context of knee surgeries where knee implant systems play a pivotal role. This regulatory action underscores the government's efforts to maintain equitable access to healthcare services and mitigate financial barriers for patients requiring knee surgeries and orthopaedic interventions. Through the establishment of ceiling prices, the NPPA endeavours to promote transparency and fairness in the pricing of orthopaedic knee implant systems, thereby enhancing the overall accessibility and affordability of crucial orthopaedic treatments for patients across the country.

6.4.4 Business Strategies in Response to DPCO, 2013

Trade Margin Rationalization

The trade margin refers to the gap between the price at which manufacturers or importers sell their products to the trade (price to trade) and the price to patients (maximum retail price). The concern of excessively high trade margins in the medical device industry has been adversely affecting both the industry and the interests of consumers. (IKIGAI Law, 2022)

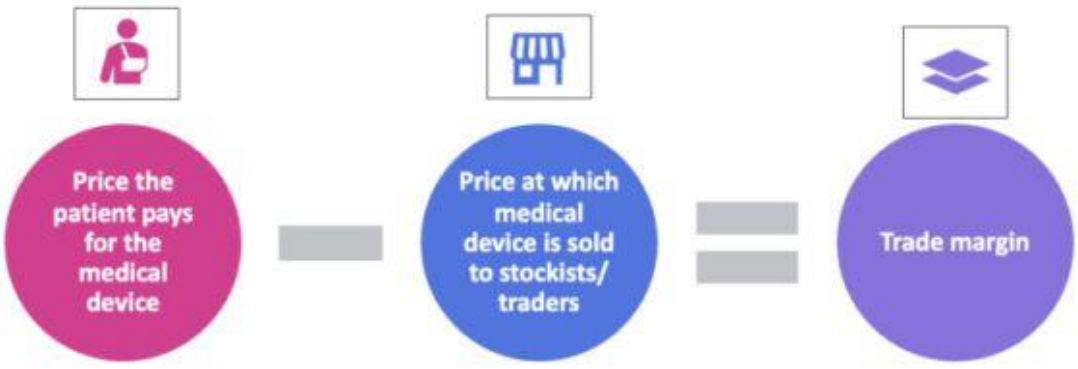


FIGURE 2: TRADE MARGIN RATIONALIZATION

Trade Margin Rationalization (TMR) is a regulatory approach implemented by governments to control and rationalize profit margins within the distribution chain of pharmaceuticals and medical devices. The primary goal of TMR is to ensure that essential healthcare products are priced reasonably and remain accessible to consumers.

Objective: The primary objective of TMR is to regulate and rationalize the profit margins at various levels of the supply chain, including manufacturers, wholesalers, distributors, and retailers, to ensure fair pricing and affordability of essential medical products.

The calculation of price of the medical device following the TMR Regulation starts with Importers as they are the first point of sale,

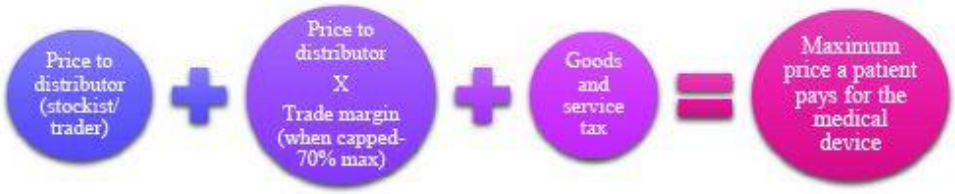
Importers: Importers start with the cost at which they import the medical device. This cost includes the purchase price of the device, any import duties, taxes, and other expenses associated with bringing the product into the country. (IKIGAI Law, 2022)

MRP = Import Price + (Import Price x Percentage of Trade Margin)

Wholesale Price: Wholesalers start with the price at which they purchase the medical device from the manufacturer or importer. This is the cost they incur to acquire the product in bulk quantities.

MRP = Wholesale Price + (Wholesale Price x Percentage of Trade Margin)

Retailer's Purchase Price: Retailers start with the price at which they acquire the medical device from wholesalers or distributors. This is the cost they incur to stock the product in their stores.



MRP = Retailer's Purchase Price + (Retailer's Purchase Price x Percentage of Trade Margin)

Awareness on TMR – Notification

The data on awareness among different stakeholders regarding the Trade Margin Rationalization (TMR) notification of 2019 paints an interesting picture. It is evident that standalone pharmacies and hospital pharmacies have the highest awareness levels, standing at 65% and 60%, respectively. This could be attributed to their direct involvement in dispensing medicines and staying updated with regulatory changes. Importers and wholesalers also showcase relatively high awareness at 61% and 64%, respectively, indicating their close engagement with the supply chain and regulatory updates. On the contrary, manufacturers seem to have the lowest awareness at 17%, which is surprising given their pivotal role in the production and distribution of pharmaceuticals.

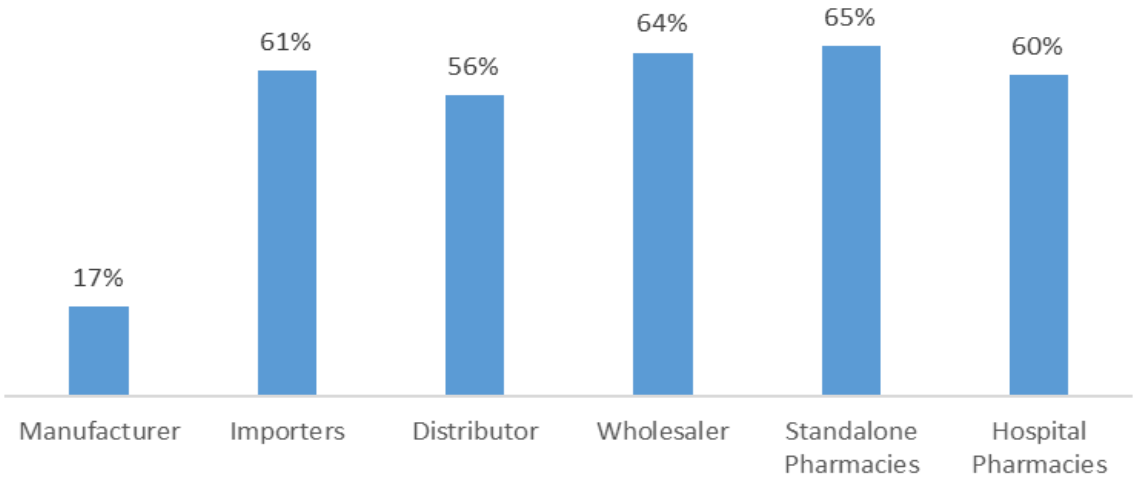


FIGURE 3: TMR AWARENESS AMONG THE STAKEHOLDERS

One potential inference could be the need for better communication channels or outreach strategies from regulatory bodies to disseminate information effectively across all stakeholders. For instance, targeted campaigns, workshops, or online platforms specifically designed to educate manufacturers might bridge this awareness gap. Moreover, the lower awareness among distributors might hint at the necessity for a more streamlined communication process within the supply chain to ensure all intermediaries are promptly informed about such critical notifications.

To improve awareness uniformly across all stakeholders, a multilateral approach is necessary. Collaborative efforts between regulatory bodies, industry associations, and stakeholders could establish standardized channels for information dissemination. These could include regular newsletters, webinars, or interactive platforms where updates and clarifications regarding regulatory changes like the TMR can be shared promptly. Encouraging a culture of continuous learning and knowledge sharing within the pharmaceutical ecosystem could significantly enhance awareness and compliance with such crucial notifications.

Change in Demand

The data on changes in demand for COVID essential devices post the Trade Margin Rationalization (TMR) notification among different stakeholders is quite revealing. manufacturers seem to have experienced the most significant increase in demand at 56%, which could be due to a heightened need for these essential devices and potentially increased production capacity. Importers also display a substantial increase in demand at 54%, possibly due to a surge in imports to meet market needs. Conversely, standalone and hospital pharmacies witnessed a decrease in demand at 24% and 30%, respectively, while wholesalers experienced a considerable decrease of 43%. This decrease could suggest various factors, such as pricing alterations or changes in consumer behavior in response to altered trade margins.

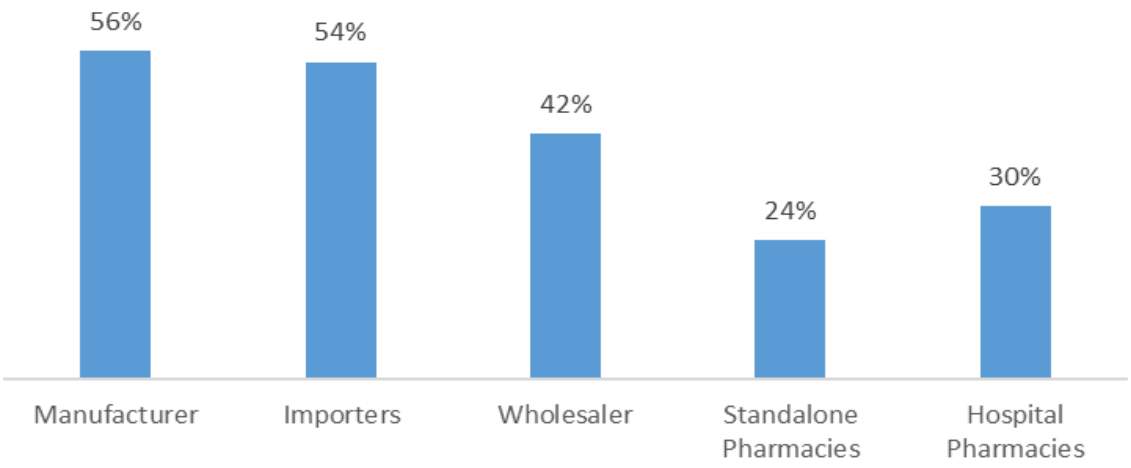


FIGURE 4: PERCEIVED CHANGE IN DEMAND AMONG STAKEHOLDERS

These insights might signify a shift in the supply chain dynamics and consumer preferences post-TMR. One possible inference could be that the altered trade margins have prompted manufacturers and importers to adapt swiftly to market demands, resulting in an increased supply of COVID essential devices. However, the decreased demand among pharmacies and wholesalers could indicate challenges in passing on the benefits of trade margin rationalization to the end consumers or a potential change in purchasing behavior due to fluctuating prices.

To navigate these shifts effectively, it is crucial to monitor market responses continually. This could involve conducting periodic assessments to understand consumer behavior patterns and adjusting pricing strategies or supply chains accordingly. Additionally, fostering transparent communication between stakeholders and regulatory bodies can help address concerns or hurdles in effectively implementing TMR-related changes. Promoting awareness campaigns highlighting the increased demand and benefits post-TMR might also help align all stakeholders toward a more cohesive response and improved adaptation to the new trade margin landscape.

Change in Sales:

The data reflecting changes in sales for COVID essential devices post the Trade Margin Rationalization (TMR) notification reveals intriguing shifts in the market dynamics among different stakeholders. Notably, importers emerge as the primary beneficiaries with a substantial increase in sales at 49%, suggesting their adaptability and responsiveness to the altered trade margins. Standalone pharmacies also show a moderate increase in sales at 31%, possibly due to their direct interaction with consumers and their ability to adjust pricing or stock based on market changes. However, manufacturers experienced a considerable decrease in sales at 81%, which is quite stark and could indicate challenges in adjusting production or pricing strategies post-TMR. Wholesalers also faced a significant decrease in sales at 45%, hinting at potential disruptions in their supply chain or pricing models.

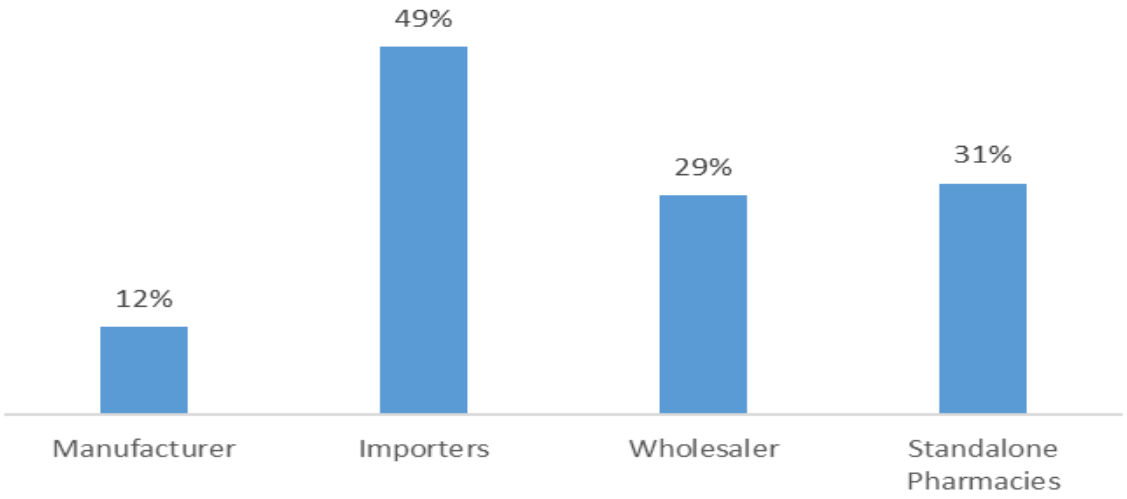


FIGURE 5: PERCEIVED CHANGE IN SALES OF THE MEDICAL DEVICES AMONG STAKEHOLDERS

The increased sales among importers and standalone pharmacies after the TMR notification suggest that these entities were better positioned to capitalize on the changes. This highlights the importance of agility and adaptability in responding to regulatory shifts within the pharmaceutical market. For manufacturers and wholesalers facing decreased sales, it could signal the need for more agile strategies to recalibrate their pricing or distribution models to align with the new trade margins. One recommendation could be for these stakeholders to re-evaluate their pricing structures, supply chains, and marketing strategies to better resonate with the revised trade margin landscape.

Enhancing collaboration and communication among stakeholders and regulatory bodies can facilitate smoother transitions post-TMR. Offering support mechanisms, such as guidelines or assistance programs for manufacturers and wholesalers to navigate pricing and production challenges, could aid in stabilizing their sales figures. Additionally, leveraging technology and data analytics to swiftly adapt to market changes and consumer preferences post-TMR can help all stakeholders remain competitive and responsive to the evolving landscape.

6.5 Price Changes of Medical Devices

The price changes of medical devices following the implementation of the (DPCO ,2013) range from 12.3% to 39.3%. The most significant price reduction is seen in nebulizers, which dropped by 39.3%. On the other hand, BP monitors had the smallest price decrease at 12.3%.

Device	Old MRP	Revised MRP (2021)	Percentage
BP Monitor	6,481	5,683	12.3%
Pulse Oximeter	6,718	5,331	20.6%
Nebulizer	3,854	2,339	39.3%
Glucometer	1,779	1,409	20.7%
Digital Thermometer	1,801	1,225	31.9%
Oxygen Concentrator	1,02,480	89,550	13.0%
Knee Implants	40,814	35,771	12.4%
Cardiac Stents	39,064	34,128	12.6%

TABLE 11: REVISED PRICES OF ESSENTIAL MEDICAL DEVICES AFTER NPPA PRICE REGULATION

Source - (NPPA, 2021)

Glucometer: Glucometers experienced the largest price reduction of 20.7%, indicating a substantial positive impact on individuals managing diabetes. Lower prices for glucometers can encourage more people to monitor their blood glucose levels regularly, given that approximately 11% of India's population has diabetes, to regularly monitor their blood glucose levels, ultimately promoting better disease management and complication prevention.

Nebulizer: Nebulizers witnessed the significant decrease in price 39.3% among all the listed medical devices. This significant reduction in price indicates that the (DPCO ,2013) measures were successful in making nebulizers more affordable and accessible to the general population. This move likely benefited patients with respiratory conditions who rely on nebulizers for treatment.

Digital Thermometer: The significant price 31.9% decrease for digital thermometers implies improved affordability for a device that is widely used for monitoring body temperature. This can be particularly beneficial during health crises such as epidemics or pandemics, where temperature monitoring is crucial.

Pulse Oximeter: Pulse oximeters also saw a notable reduction in price about 20.6%. These devices gained prominence during the COVID-19 pandemic for monitoring oxygen levels in patients, and the price decrease likely made them more accessible to both healthcare facilities and individuals.

Blood Pressure Monitors: Blood pressure monitors saw a moderate price reduction of 12.3%, which can have a beneficial effect on individuals dealing with hypertension. The National Family Health Survey 2019-20 revealed that the prevalence of hypertension is approximately 24% among men and 21% among women, representing an increase from 19% and 17%, respectively, compared to the previous NFHS Survey in 2015-16. Regular monitoring of blood pressure is essential for preventing cardiovascular complications, and the reduced prices can incentivize more individuals to purchase these devices.

Oxygen Concentrator: While there was a price decrease for oxygen concentrators is 13.0%, the reduction was relatively moderate. These devices are critical for patients with respiratory issues, and any price reduction can contribute to better healthcare access.

Knee Implants: Knee implants had the smallest price decrease at about 12.4% among the listed devices. While any reduction in the cost of knee implants is beneficial for patients requiring joint replacement surgeries, this percentage decrease was comparatively lower than others.

Cardiac Stents: Similar to Knee Implants, cardiac stents also saw a relatively smaller price decrease is about 10.8%, Given their importance in treating heart conditions, further efforts may be needed to make them more affordable.

In summary, the data illustrates that the (DPCO ,2013) had a positive impact on reducing the prices of essential medical devices, with glucometers and nebulizers experiencing the most significant decreases. These price reductions likely enhanced accessibility to these devices, promoting better healthcare and disease management for patients. The devices with the highest percentage decrease in price are likely to have the biggest impact on public health. For example, the decrease in the price of glucometers could make it easier for people with diabetes to monitor their blood sugar levels. This could lead to better health outcomes and reduced healthcare costs. However, some devices, such as knee implants and cardiac stents, had comparatively smaller price decreases, indicating the need for ongoing efforts to make them more affordable for those in need.

7 Primary Analysis

The implementation of the Drugs (Prices Control) Order, 2013 and the regulatory actions of the National Pharmaceutical Pricing Authority (NPPA) have had a profound impact on essential medical devices in India. The primary analysis focuses on a comprehensive analysis of key parameters such as price, quality, demand, sales, and supply for the selected medical devices. These devices include pulse oximeters, glucometers, oxygen concentrators, nebulizers, knee implants, cardiac stents, and blood pressure monitors, along with digital thermometers. The study delves into how these regulatory measures have reshaped the landscape of these essential medical devices, influencing their accessibility, affordability, and overall market dynamics.

7.1 Glucometer

The primary examination focused on glucometers, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.1.1 Change in Supply for Glucometer

The provided data illustrates the changes in the supply of Glucometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers and importers

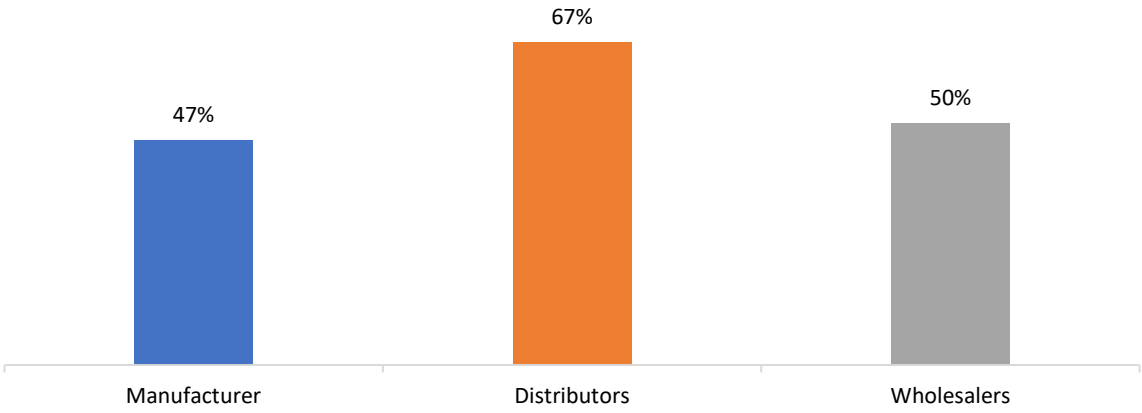


FIGURE 6: CHANGE IN SUPPLY FOR GLUCOMETER

In the broader context of glucometer supply, distributors are the highest proportion of respondents who witnessed an increase in supply, accounting for a substantial 67% of the overall distribution network. This notable dominance underscores their pivotal role in the seamless distribution of glucometers from manufacturers to end-users, reaffirming their critical position within the market's supply chain. Their significant presence indicates a reliance on their efficient networks and logistical capabilities to ensure the widespread availability of these essential medical devices. This emphasis on distributors showcases the importance of their operational efficiency and resilience in maintaining a steady and accessible supply of glucometers, crucial for individuals managing diabetes and healthcare facilities relying on these devices for patient care.

The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which imposes a cap on the trade margin for glucometers, marks a notable shift in the availability of these medical devices. This regulatory measure aims to streamline pricing structures and ensure more equitable access to glucometers in market.

The data reflects significant supply chain challenges for Glucometers post-COVID-19 pandemic among the importers who faced COVID-19 pandemic impact on supply chain for medical devices, with a 51% increase in lead times, 34% difficulty in sourcing raw materials, 9% delays in shipping, and 7% disruptions in manufacturing. These difficulties likely resulted in constrained availability and increased costs for glucometer importers. In response to such challenges, the Trade Margin Rationalization notification likely played a crucial role in mitigating the impact by rationalizing trade margins and ensuring more stable pricing structures for glucometers. This regulatory intervention would have helped stabilize the market, ensuring continued access to glucometers despite the supply chain disruptions caused by the pandemic.

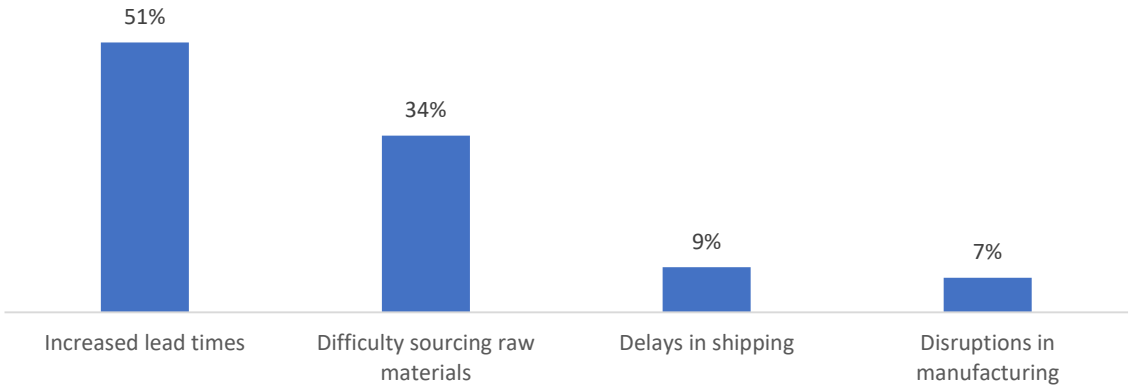


FIGURE 7: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

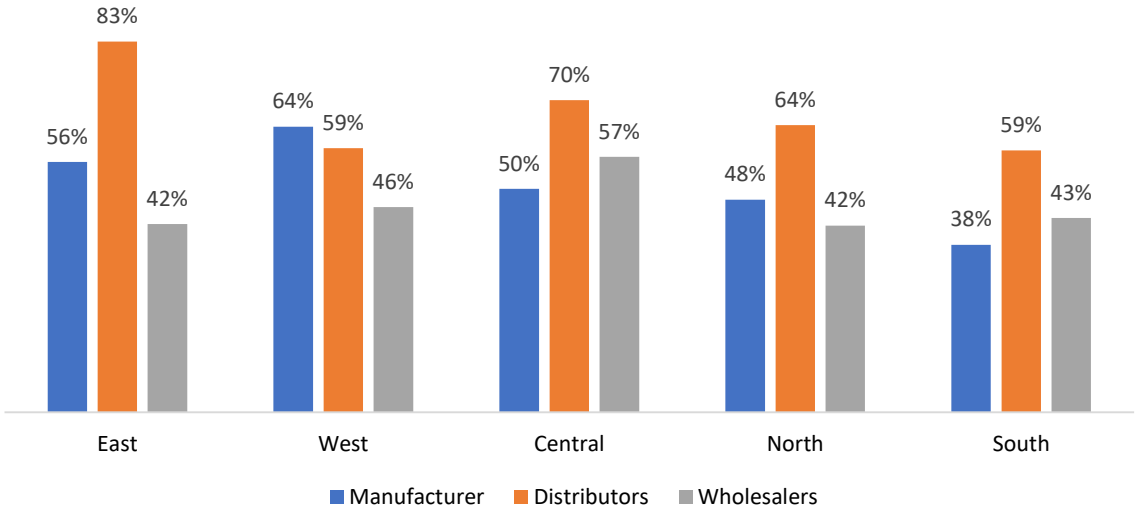


FIGURE 8: REGION WISE CHANGE IN SUPPLY FOR GLUCOMETER

Geographically, the West appears to exhibit the highest supply percentages across manufacturers 64%, distributors 59%, and wholesalers 46%. This suggests a robust manufacturing base and a well-established distribution network in that region, potentially contributing to higher availability.

Conversely, the South consistently shows comparatively lower supply percentages across stakeholders. While manufacturers in the South supply 38%, distributors and wholesalers exhibit percentages hovering around 59% and 43%, respectively. These lower percentages might indicate challenges within the distribution networks or potential regional limitations impacting the flow of glucometers to end-users.

Examining the impact of supply chain disruptions during the COVID-19 period, it is evident that the East faced significant disruptions across all stakeholders, notably among manufacturers 71% and wholesalers (74%). These disruptions could have resulted from pandemic-induced challenges, including logistical bottlenecks, reduced workforce, or raw material shortages, potentially impacting the overall supply chain efficiency in the East.

The Central region experienced disruptions primarily among manufacturers (41%) and distributors (36%), possibly affecting the initial stages of production and subsequent distribution channels. These disruptions might have contributed to the slightly lower supply percentages observed in the data for glucometers in this region.

In summary, while distributors maintain a dominant position in the glucometer supply chain, regional variations and supply chain disruptions during the pandemic have impacted the flow of these devices across different areas. Addressing these disruptions by implementing resilient supply chain strategies could mitigate challenges and ensure more consistent access to glucometers, crucial for managing and monitoring blood glucose levels for individuals with diabetes.

7.1.2 Change in Demand for Glucometer

The provided data presents changes in the demand of Glucometer across different regions for wholesalers, distributors, standalone Pharmacies, hospital Pharmacies, manufacturers & importers

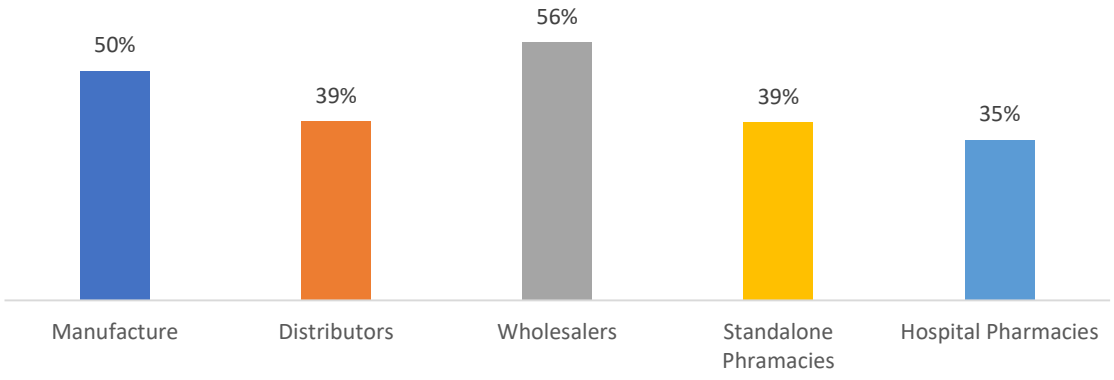


FIGURE 9: CHANGE IN DEMAND FOR GLUCOMETER

In the post-COVID era, wholesalers emerge as the dominant stakeholders in the glucometer demand, with 56% of the respondents witnessing an increase in demand. This prominence underscores their pivotal role in the supply chain, serving as critical intermediaries between manufacturers and various endpoints, including standalone pharmacies and hospital pharmacies, thus facilitating the accessibility and distribution of these essential medical devices.

The Trade Margin Rationalization (TMR) notification issued by NPPA in 2021, which imposes a cap on the trade margin for glucometers, reflects a noteworthy transformation in the demand for these devices. This regulatory intervention seeks to address pricing disparities and enhance affordability, potentially reshaping the landscape of glucometer accessibility and usage.

After the implementation of the TMR notification, there has been a noticeable surge in demand for glucometer medical devices among importers. Approximately 62% of importers who witnessed an increase in demand, suggesting a substantial uptick in consumer interest or medical necessity for these devices. The relatively low percentage of 12% importers who witnessed a decrease implies a minor impact on demand, while 26% witnessed no change suggests a stable market response overall. Overall, the data reflects a significant rise in demand for glucometers among importers following the TMR notification, indicating a potential shift in healthcare priorities or increased awareness of glucose monitoring.

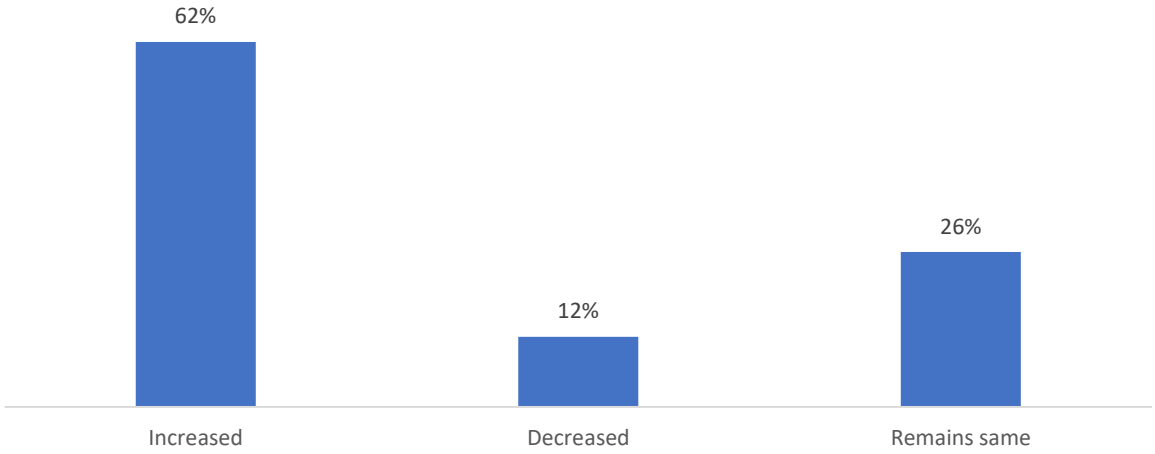


FIGURE 10: IMPORTERS – CHANGE IN DEMAND

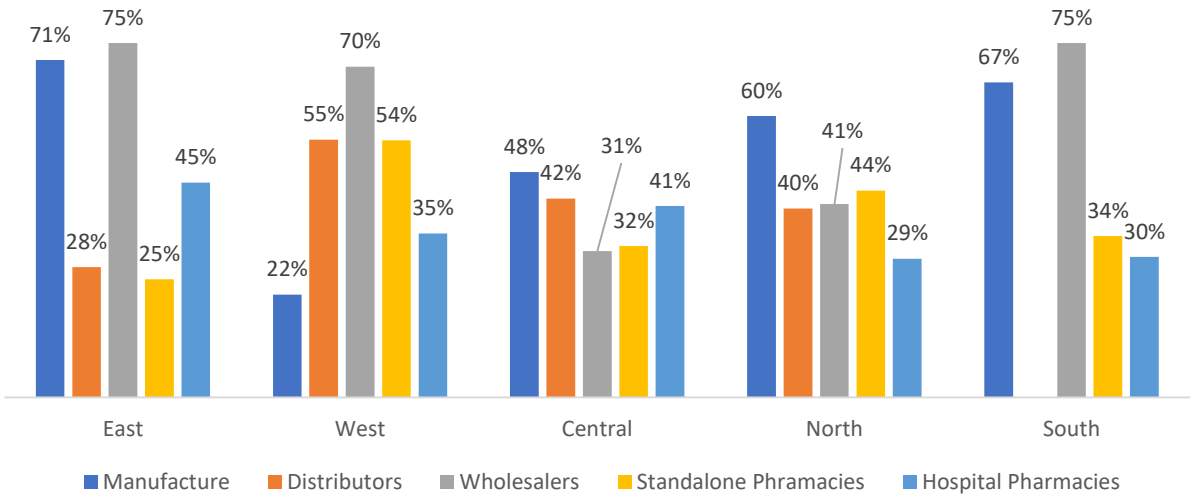


FIGURE 11: REGION WISE CHANGE IN DEMAND FOR GLUCOMETER

Geographically, distinct demand trends surface across regions. Central region respondents witnessed noteworthy increases in demand across stakeholders. Manufacturers in Central witnessed a significant

48% surge in demand, potentially indicating increased production or heightened market demand within this area. However, while distributors and wholesalers in Central region respondents witnessed increases at 42% and 31% respectively, these percentages were relatively lower, potentially signalling challenges in the distribution network or varying regional market dynamics impacting the distribution chain.

In contrast, the North region witnessed a substantial 60% surge in demand for manufacturers and a 40% increase in demand for distributors. This discrepancy might highlight a potential mismatch between production capacities and distribution efficiencies. Notably, hospital pharmacies in the North region respondents witnessed a significant 29% increase in demand, potentially reflecting an amplified focus on healthcare facilities' preparedness post-COVID.

Reasons for high demand post-COVID is with regards to the TMR notification in 2021 by NPPA on making the prices more affordable and available. High demand might stem from increased awareness of the device's significance, amplified healthcare monitoring needs, or specific regional health initiatives emphasizing glucometer. Conversely, lower demand could be attributed to market saturation, varying regional healthcare priorities, or limitations in the distribution network's efficiency.

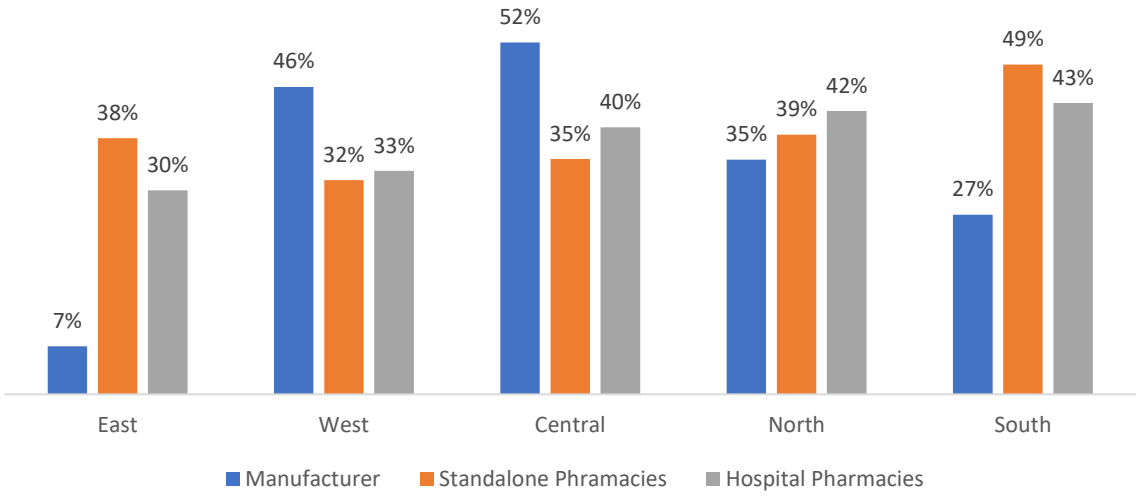


FIGURE 12: REGIONAL WISE GLUCOMETER DEMAND CONSISTENCY

Analysing stakeholder perceptions regarding unchanged demand post-COVID, the data unveils nuanced trends. Manufacturers in the West witnessed a notable 46% increase in demand, while hospital pharmacies and standalone pharmacies showed modest growth at 33% and 32% respectively.

In summary, the post-TMR notification demand dynamics for glucometers underscore the influential role of wholesalers in catering to this heightened need. Regional variations in demand signal complexities influenced by production capacities, distribution efficiencies, and regional healthcare priorities, shaping the accessibility and adoption of these critical medical devices across diverse regions and stakeholders.

7.1.3 Change in Sales for Glucometer

The provided data presents changes in the sales of Glucometer across different regions for wholesalers, distributors, standalone Pharmacies, hospital Pharmacies, manufacturers & importers.

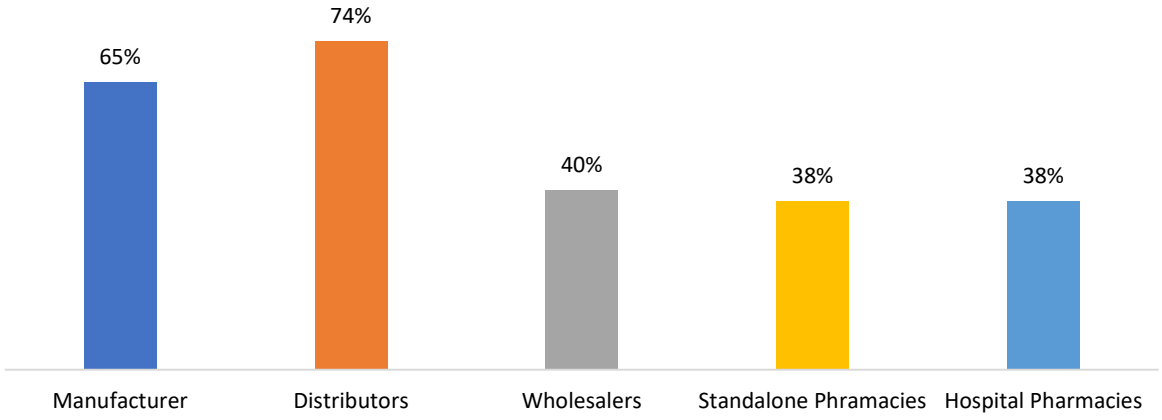


FIGURE 13: CHANGE IN SALES FOR GLUCOMETER

In the post-COVID era, the sales landscape for glucometer showcases a notable trend: distributors emerge as the predominant force in driving sales, with a significant 74% of them witnessed an increase in sales. This dominance highlights their pivotal role in facilitating the distribution and accessibility of glucometers across various geographic regions. Their extensive networks and logistical capabilities position them as crucial intermediaries, effectively bridging the gap between manufacturers and end-users, including standalone pharmacies and hospital pharmacies. The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which places a cap on the trade margin for glucometers, signals a substantial shift in glucometer sales trends. This regulatory action is poised to influence market dynamics and consumer behaviour, potentially altering the sales landscape for glucometers across various sectors.

After the implementation of TMR notification by NPPA the importers' of on glucometer medical devices witnessed a notable increase in sales. Approximately 45% of importers witnessed a surge in sales for glucometers, suggesting a growing demand for diabetes management tools post-notification. With only 14% witnessed a decrease and 41% indicating no change, the data reveals a clear trend towards heightened sales of glucometers among importers. This reflects an increasing awareness of diabetes and the importance of regular blood glucose monitoring, indicating a shift towards proactive healthcare management in response to the TMR notification.

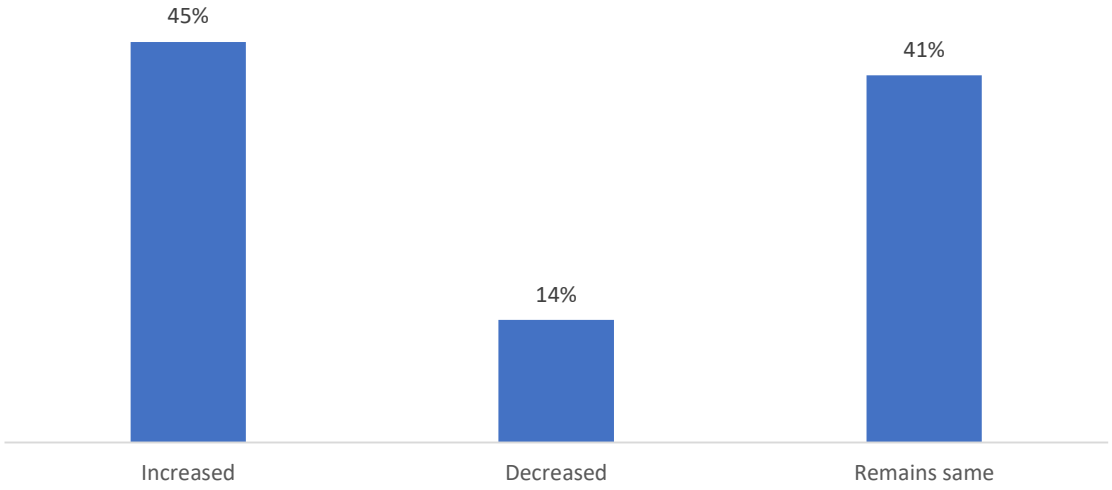


FIGURE 14: IMPORTERS – CHANGE IN SALES PERFORMANCE

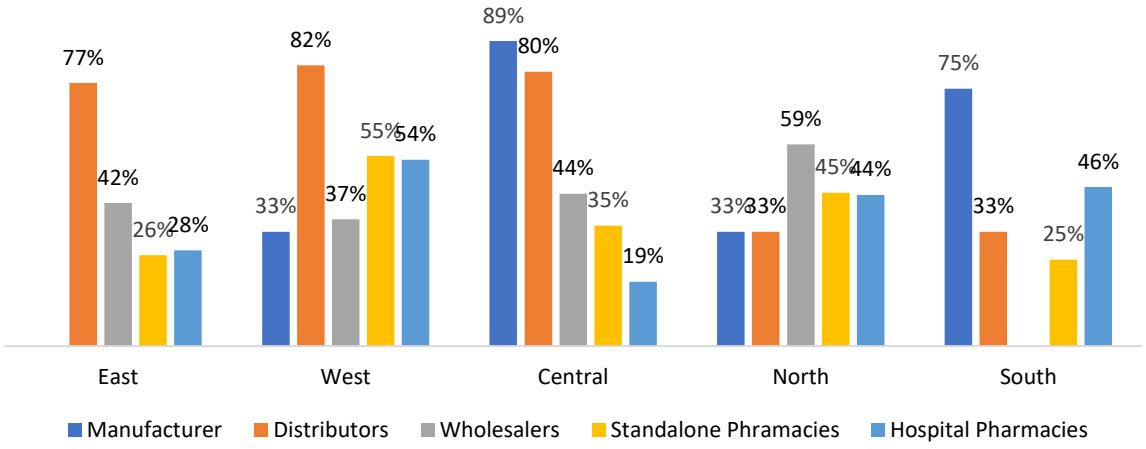


FIGURE 15: REGION WISE CHANGE IN SALES FOR GLUCOMETER

Geographically, the Central region stands out with remarkable sales increase across the board. Manufacturers in the Central region witnessed an impressive 89% rise in sales, indicative of heightened production or market demand. Distributors and wholesalers also witnessed substantial increases of 80% and 44%, respectively, showcasing the robust distribution networks and increased uptake of glucometers within this region. Standalone pharmacies witnessed a staggering 35% increase, while hospital pharmacies, although with a lower percentage, also exhibited growth at 19%. This surge in sales across stakeholders within the Central region might reflect improved healthcare infrastructure, increased awareness, or specific regional health initiatives post-COVID.

In contrast, the South witnessed a surge in sales for manufacturers (75%) but perceived lower adoption rates among distributors (33%) and a complete absence of sales for wholesalers. Standalone pharmacies and hospital pharmacies in the South witnessed noteworthy sales growth at 25% and 46%, respectively. However, the disparity in sales among stakeholders in the South could potentially be attributed to varying market dynamics, differing consumer behaviours, or specific challenges in distribution networks.

Reasons for both high and low sales post-TMR notification are multifaceted. High sales might be attributed to increased awareness of glucometers' importance, greater emphasis on healthcare monitoring post-pandemic, and improved accessibility through distributors and pharmacies. Conversely, factors leading to lower sales could include market saturation, limited accessibility due to distribution constraints, or varying regional healthcare priorities.

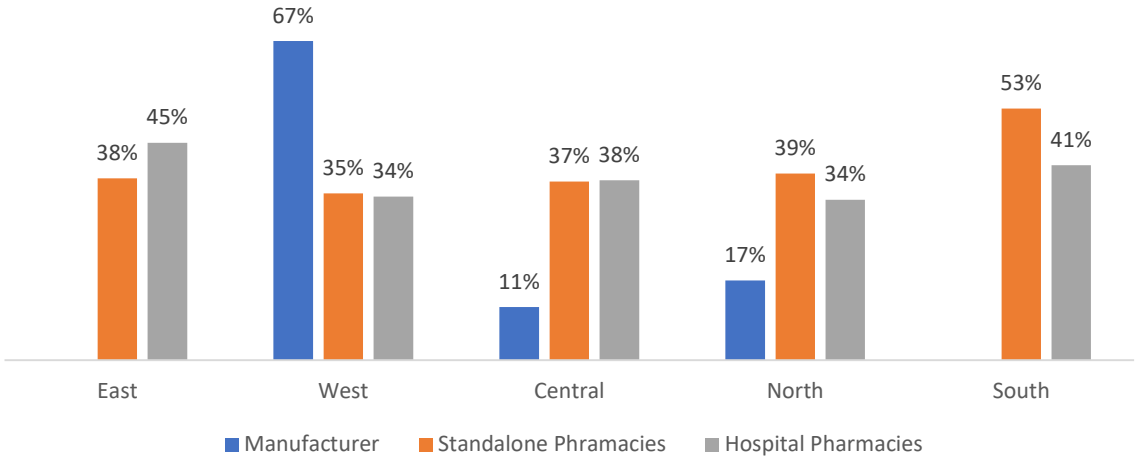


FIGURE 16: REGION WISE GLUCOMETER SALES CONSISTENCY

Examining the stakeholder perceptions regarding unchanged sales post-COVID, the data reveals nuanced patterns. Manufacturers in the West perceived a significant 67% increase in sales, while retailers and hospitals perceived relatively stable sales. Conversely, the South witnessed no change in manufacturer sales, with substantial growth reported by hospitals (53%) and a moderate increase among retailers.

In conclusion, the post-TMR notification landscape for glucometer sales underscores the pivotal role of distributors in driving accessibility and highlights regional variations influenced by factors such as healthcare infrastructure, market dynamics, and consumer behaviours. Understanding these trends can help optimize distribution strategies and enhance access to critical medical devices across diverse regions and stakeholders.

7.1.4 Change in Price for Glucometer

The provided data presents changes in the price of Glucometer across different regions for wholesalers, distributors, standalone Pharmacies, hospital Pharmacies, manufacturers & Importers.

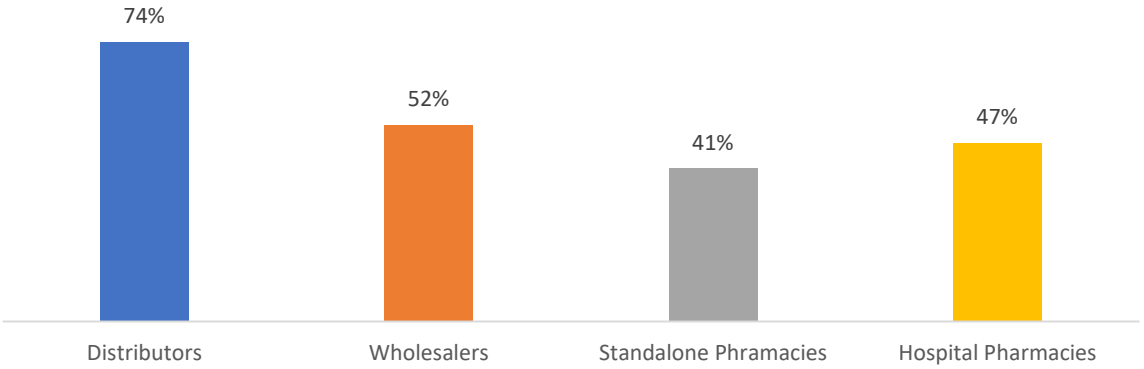


FIGURE 17: CHANGE IN PRICE FOR GLUCOMETER

In the post-COVID landscape for glucometer prices, distributors again stand out, with a substantial 74% respondents indicating an increased cost. Their significant role in pricing strategies is evident across various geographic regions, impacting the cost structure from manufacturers to wholesalers, standalone pharmacies, and hospital pharmacies.

It appears that even with the TMR notifications, a large proportion of the intermediaries such as distributors and wholesales have witnessed an increase in price. With 74% of distributors, 52% of wholesalers, 41% of standalone pharmacies, and 47% of hospital pharmacies perceived an increase in costs, it indicates a widespread trend of pressure on margins on the distribution chain. This price pressures are likely to reduce margins for intermediaries, even when they remain protected for patients and healthcare providers alike. The findings suggest a positive impact of the TMR notification, aligning with its goal to improve and maintain affordability and access to essential medical devices like glucometers.

For glucometers since the implementation of the TMR notification witnesses an overall increase in cost, with 6% of importers perceived an increase. With only 53% witnessed a decrease in costs and 41% noticed no change, the data underscores the effectiveness of the TMR notification in protecting retail prices, impacting accessibility and affordability in healthcare. This indicates a of the TMR notification, aligning with its objective to enhance accessibility to vital medical devices like glucometers.

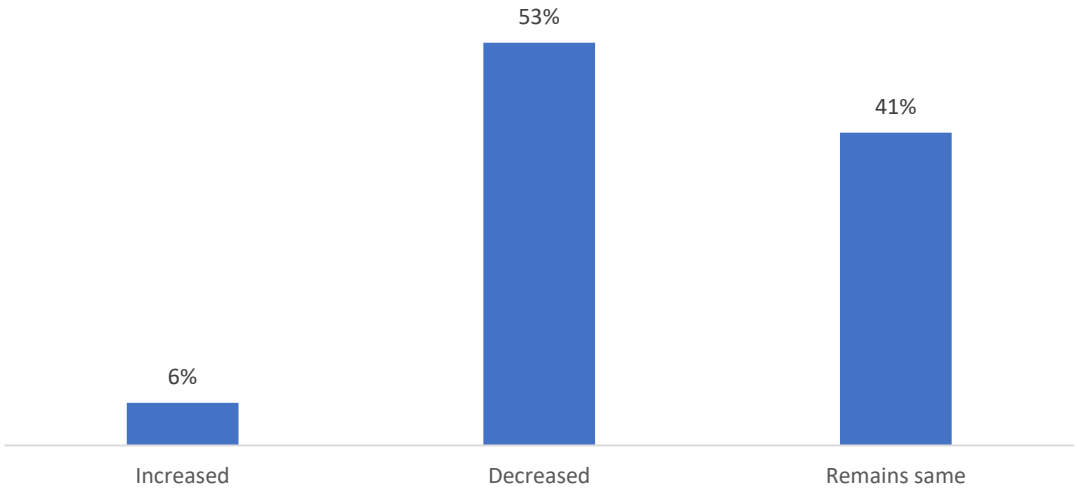


FIGURE 18: IMPORTERS – PRICING PERCEPTION

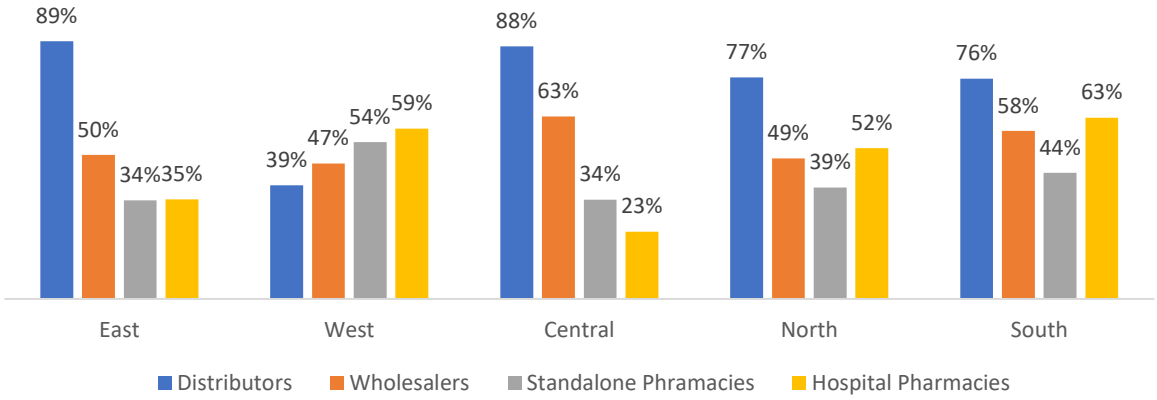


FIGURE 19: REGION WISE CHANGE IN PRICE FOR GLUCOMETER

Geographically, distinct price dynamics characterize different regions. Central region witnessed notable cost increases across stakeholders. 88% of the Distributors in Central perceived an increase to the cost structure within the distribution chain. However, only 63% of the Wholesalers in Central reflected an increase, hinting at potential variations in the pricing strategies or market dynamics between distributor and wholesale prices.

In contrast, the North region demonstrated that a significant 77% of distributors felt that the costs increased, significantly influencing the pricing structure within the region. However, a smaller proportion of Wholesalers (49%) in the North suggested an increase in wholesale costs.

Reasons for the increase in cost can vary, influenced by factors such as increased production costs, heightened demand, supply chain disruptions, or changes in market dynamics post-COVID. Increased demand for glucometers post-pandemic, combined with potential supply chain disruptions or increased manufacturing costs, could have led stakeholders to adjust prices to maintain profitability or cover increased expenses.

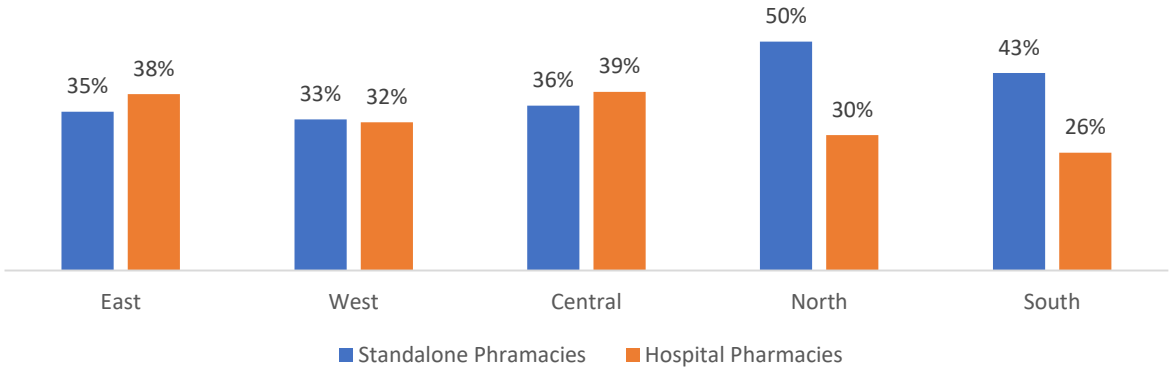


FIGURE 20: REGION WISE GLUCOMETER PRICE CONSISTENCY

Analysing stakeholder perceptions regarding unchanged costs post-COVID, the data indicates nuanced patterns. Standalone pharmacies and hospital pharmacies in different regions reported varying levels of stability in cost structure, with some witnessing minor changes but overall demonstrating a relatively stable costing environment.

In conclusion, the post-TMR notification landscape for glucometer prices emphasizes the substantial influence of distributors in shaping the cost structure. Regional variations in cost changes suggest diverse market dynamics, potentially influenced by production costs, distribution efficiency, or changes in demand and supply dynamics in different regions.

7.1.5 Change in Quality for Glucometer

The provided data presents changes in the quality of Glucometer across different regions for wholesalers, distributors, standalone Pharmacies, hospital Pharmacies, and manufacturers.

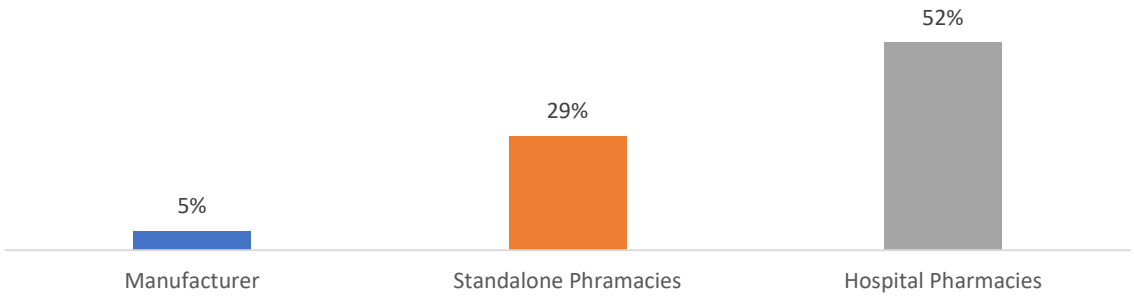


FIGURE 21: CHANGE IN QUALITY FOR GLUCOMETER

In the context of post-COVID improvements in glucometer quality, hospital pharmacies stand out as the key influencers, with 52% of these stakeholders witnessed an overall increase in quality. This emphasizes their pivotal role in ensuring higher standards of quality for glucometers compared to other stakeholders like manufacturers and standalone pharmacies. The Trade Margin Rationalization (TMR) notification introduced by NPPA in 2021, which imposes a cap on the trade margin for glucometers, highlights a notable evolution in the quality standards of glucometer products. This regulatory measure aims to uphold product integrity and ensure that consumers have access to high-quality glucometers, potentially fostering greater trust and reliability in the market.

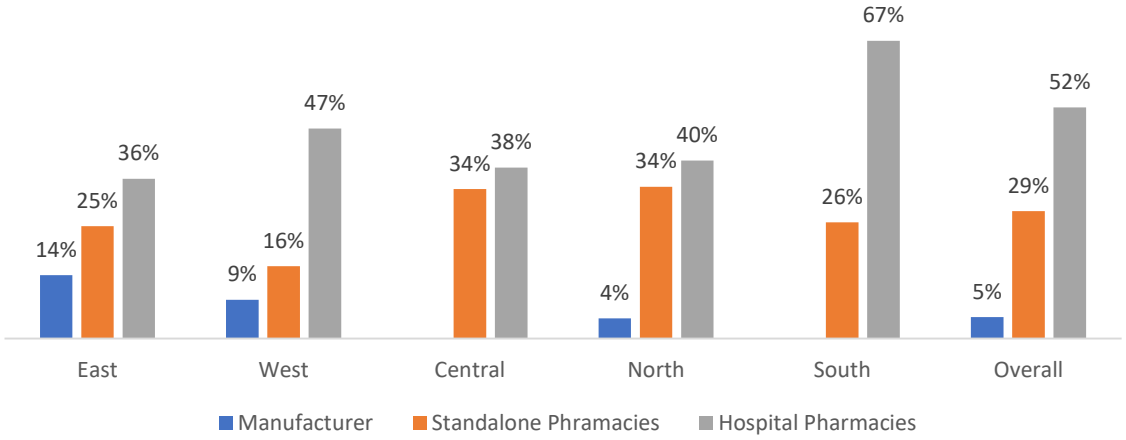


FIGURE 22: REGION WISE CHANGE IN QUALITY FOR GLUCOMETER

Geographically, varied enhancements in quality are noticeable across regions. The South region demonstrates the most substantial quality improvements, with 67% hospital pharmacies indicating a significant enhancement in quality. This region's emphasis on improved glucometer quality might be driven by a heightened focus on healthcare standards or increased demand for more accurate and reliable glucometers in healthcare settings.

Conversely, even while a significant proportion of stakeholders in the East region witnessed an increase in quality, yet a lower 36% of hospital pharmacies perceived an improvement in quality, potentially highlighting a need for a regional focus on enhancing glucometer quality for better healthcare delivery.

Reasons for the changes in glucometer quality post-TMR notification can vary, possibly influenced by technological advancements, evolving market demands for accuracy, or feedback from healthcare practitioners. The increased emphasis on quality improvements might stem from a growing need for more reliable glucose monitoring tools post-pandemic, encouraging stakeholders, particularly hospital pharmacies, to invest in enhancing glucometer standards.

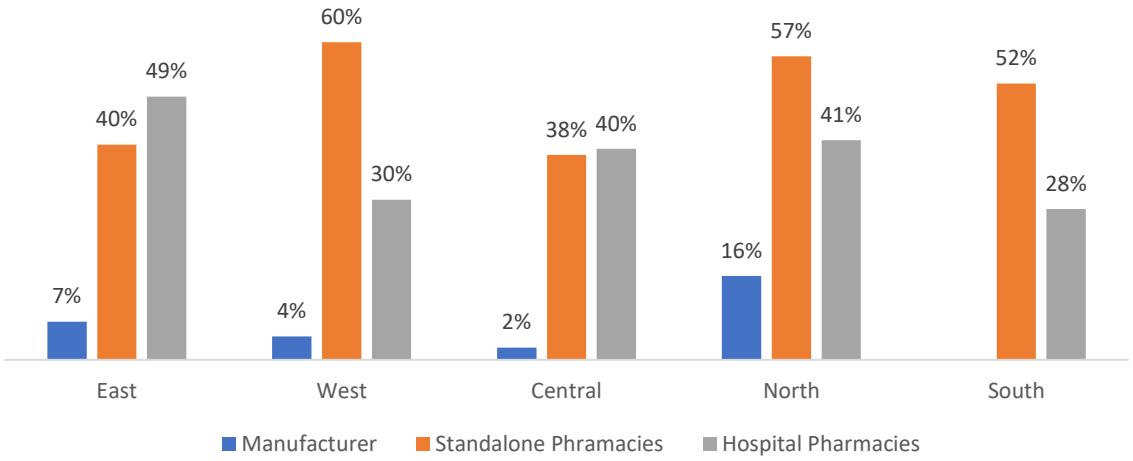


FIGURE 23: REGION WISE GLUCOMETER QUALITY CONSISTENCY

Analysing stakeholder perceptions regarding unchanged quality post-COVID, the data indicates varying levels of stability across regions and stakeholders. Standalone pharmacies and manufacturers in

different regions witnessed differing levels of consistency in quality changes, while hospital pharmacies in most regions demonstrated a consistent effort to maintain or improve quality post-pandemic.

In conclusion, the post-TMR notification landscape for glucometer quality accentuates a pronounced focus on raising standards, particularly in regions like the South. Hospital pharmacies play a pivotal role in leading this charge, underscoring the importance of accurate and reliable glucometers in the evolving landscape of healthcare delivery post-pandemic.

To conclude, the insights gleaned from the comprehensive analysis of glucometer metrics post-TMR paint a multifaceted picture of the device's landscape, emphasizing the critical role of distributors and stakeholders across various parameters. Distributors, serving as the linchpin in the supply chain, dominate in supply, sales, and demand, showcasing their significant influence in ensuring the accessibility of glucometers. However, regional variations in supply and sales highlight differing market dynamics, with regions like the West displaying robust supply percentages, potentially due to well-established manufacturing bases and distribution networks. In contrast, the South witnessed lower supply and sales figures, possibly indicating challenges in distribution or market complexities influencing glucometer accessibility.

Supply chain disruptions during the pandemic period, particularly in the East and Central regions, have significantly impacted glucometer availability. Addressing these disruptions through resilient supply chain strategies could mitigate challenges and ensure consistent access to glucometers. Moreover, the witnessed cost increases, largely influenced by distributors, might be a consequence of heightened demand post-COVID, combined with potential supply chain disruptions or increased manufacturing costs. To optimize accessibility and affordability, stakeholders could explore strategies to streamline costs without compromising device quality.

The surge in demand for glucometers is multifaceted, influenced by heightened awareness, healthcare monitoring emphasis, and increased accessibility through distributors and pharmacies. However, lower demand could be attributed to market saturation, distribution constraints, or varying healthcare priorities. The notable quality improvements, particularly driven by hospital pharmacies, signal a collective effort to enhance glucometer accuracy and reliability. To maintain this positive trend, investing in technological advancements and encouraging standardized quality measures could further enhance the accessibility and reliability of glucometers across diverse regions, ensuring better healthcare outcomes for individuals managing diabetes. Ultimately, focusing on resilient supply chains, cost optimization, and sustained quality improvements will be key to ensuring consistent availability and affordability of glucometers nationwide.

7.2 Pulse Oximeter

The primary examination focused on Pulse Oximeter, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.2.1 Change in Supply for Pulse Oximeter

The provided data illustrates the changes in the supply of Pulse Oximeter Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

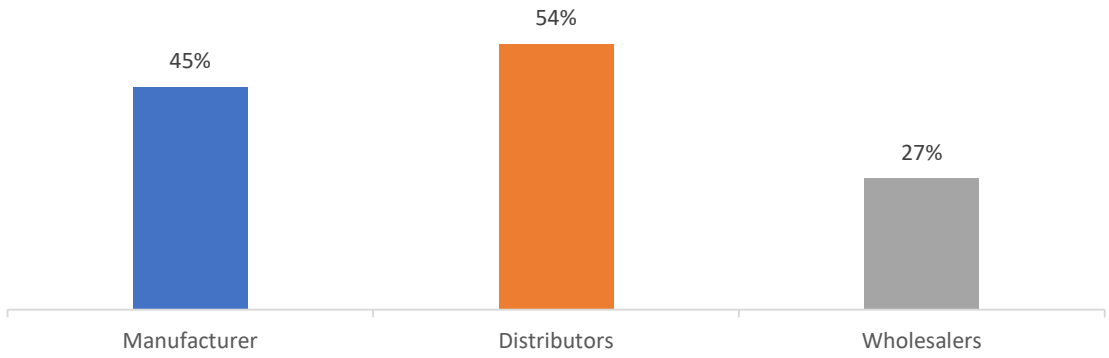


FIGURE 24: CHANGE IN SUPPLY FOR PULSE OXIMETER

In the overall supply landscape for pulse oximeters, distributors play a pivotal role, and 54% of respondents in this category witnessed an improvement in supply. This significant percentage underscores their critical position in the supply chain, acting as intermediaries between manufacturers and end-users. Their prominence suggests a streamlined and effective mechanism for getting these essential medical devices into the hands of healthcare facilities and retail pharmacies. This strong presence indicates the reliance on these entities for the efficient distribution and accessibility of pulse oximeters, highlighting the importance of bolstering and optimizing distributor networks to ensure consistent and widespread availability of these crucial devices across the market.

This dominance could indicate their crucial role in bridging the gap between manufacturers and end-users, possibly due to their localized presence and ability to efficiently reach healthcare facilities or retailers.

However, the data also suggests notable supply chain disruptions for Pulse Oximeters Post-COVID-19 pandemic, with a 50% increase in lead times, 26% difficulty in sourcing raw materials, 16% delays in shipping, and 9% disruptions in manufacturing. These challenges likely led to limited availability and higher costs for importers of pulse oximeters. The Trade Margin Rationalization notification likely served as a critical measure to alleviate these impacts by rationalizing trade margins, thereby ensuring more stable pricing dynamics for pulse oximeters. This regulatory intervention would have helped

stabilize the market, ensuring continued access to pulse oximeters despite the supply chain disruptions encountered during the pandemic.

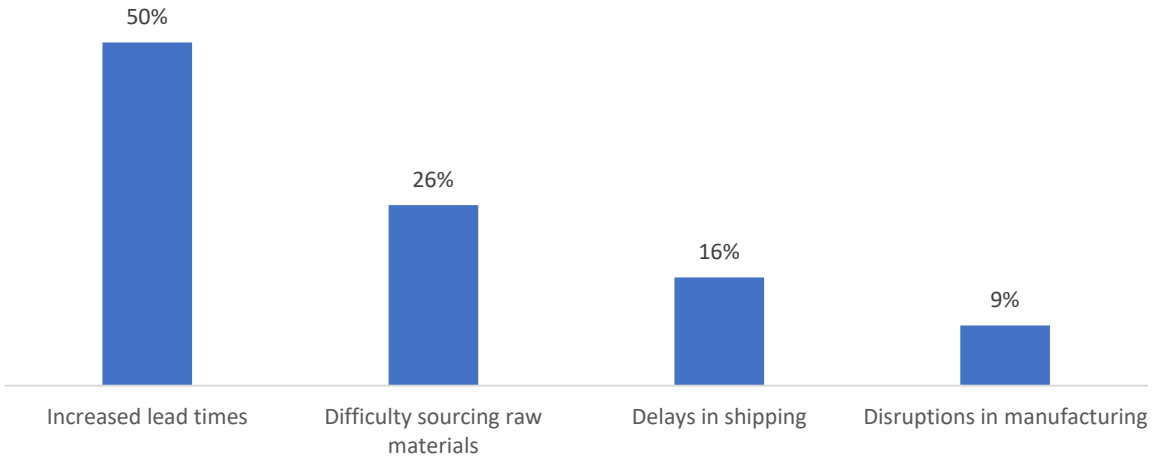


FIGURE 25: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

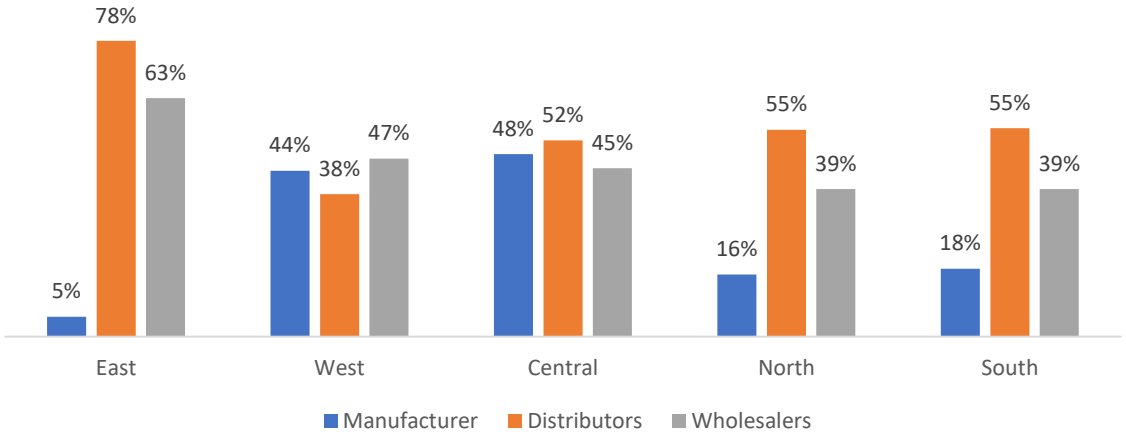


FIGURE 26: REGION WISE CHANGE IN SUPPLY FOR PULSE OXIMETER

Geographically, the Central region respondents witnessed the highest supply percentages across all stakeholders: manufacturers (48%), distributors (52%), and wholesalers (45%). This might suggest a robust infrastructure or a higher concentration of healthcare facilities in this area, leading to increased demand and subsequent supply.

In contrast, the West appears to have the highest supply by manufacturers (44%), which could be attributed to the presence of manufacturing hubs or favourable industry policies in that region. However, it also shows relatively lower supply percentages for distributors (38%) and wholesalers (47%), indicating potential challenges in the distribution network or a less developed wholesale market.

The North and South regions share similarities in their supply patterns, with moderate percentages across stakeholders, possibly indicating a balanced market without significant regional dominance.

The low supply percentages in certain regions or stakeholders could be influenced by various factors, prominently supply chain disruptions. Looking at the disruption data, it is evident that the West faced

the most significant disruptions across all stakeholders, with manufacturers experiencing a high disruption rate (64%). This could significantly impact the overall supply chain efficiency in that region, leading to lower distribution and wholesale figures.

Similarly, the South experienced disruptions particularly among distributors (25%) and wholesalers (57%), suggesting potential challenges in sourcing and delivering products to end-users. These disruptions, be it due to logistical issues, raw material shortages, or other unforeseen circumstances, might have contributed to the comparatively lower supply percentages in these regions.

The distribution dominance in the supply chain, regional variations, and supply chain disruptions collectively paint a picture of the complexities and challenges within the pulse oximeter market. Addressing these disruptions and potentially enhancing distribution networks could help balance the supply chain and ensure better availability of these critical medical devices across all regions.

7.2.2 Change in Demand for Pulse Oximeter

The provided data illustrates the changes in the demand witnessed by respondents for Pulse Oximeter Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

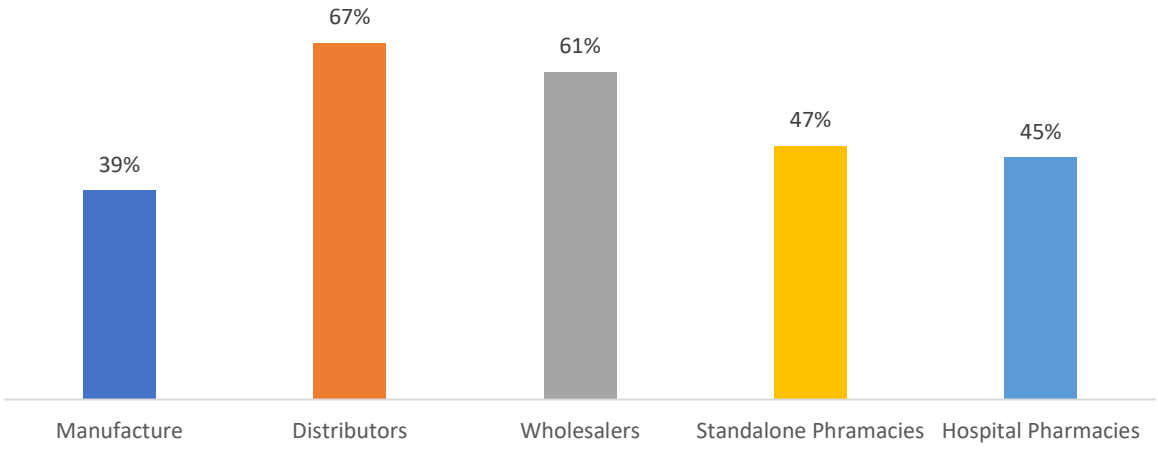


FIGURE 27: CHANGE IN DEMAND FOR PULSE OXIMETER

In the landscape of post-COVID demand for pulse oximeters, a significant 67% of the distributors witnessed an increase in the overall demand. This substantial dominance underscores their pivotal role in the distribution network, facilitating the flow of these critical medical devices from manufacturers to various end-users, including standalone pharmacies and hospital pharmacies, thus ensuring widespread accessibility. The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which enforces a cap on the trade margin for glucometers, underscores a notable shift in the demand for pulse oximeters. This regulatory measure may have broader implications for the medical device market, potentially influencing consumer preferences and procurement patterns for pulse oximeters.

Following the implementation of the TMR notification, importers have witnessed a notable increase in demand for pulse oximeter medical devices. The data indicates that 65% of importers perceived an uptick in demand for pulse oximeters, reflecting a significant surge in consumer interest or medical necessity post-notification. With only 9% witnessed a decrease and 26% indicating no change, the

majority of importers have witnessed a heightened demand for pulse oximeters, suggesting a growing emphasis on health monitoring and respiratory care in the wake of the TMR notification.

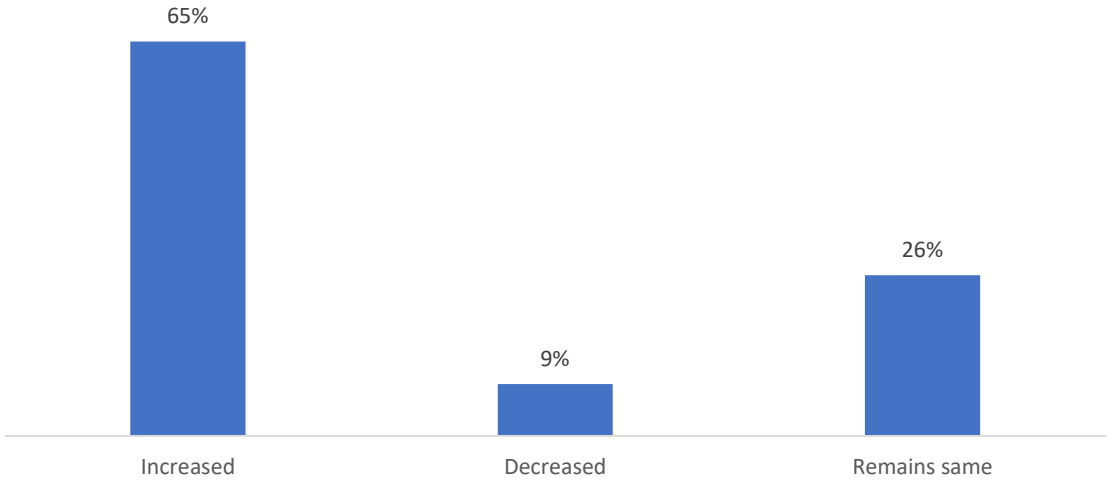


FIGURE 28: IMPORTERS – CHANGE IN DEMAND

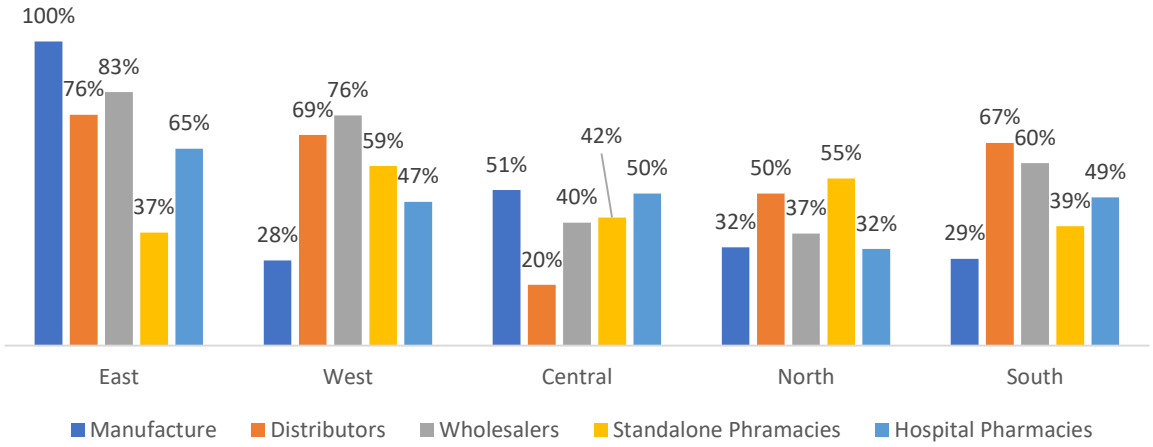


FIGURE 29: REGION WISE DEMAND FOR PULSE OXIMETER

Geographically, distinctive demand patterns emerge across regions. The Central region witnessed with significant increases in demand across stakeholders. 51% of the Manufacturers in Central perceived an increase in demand, indicating a substantial need for these devices or potentially heightened production capacities in response to the demand surge. However, only 20% and 40% of the distributors and wholesalers respectively in Central demonstrated witnessed an increase in demand, suggesting potential bottlenecks in the distribution chain.

Conversely, the 32% of the respondents from the North region respondents indicates increase in demand for manufacturers and a 50% of the distributors perceived an increase in demand. This disparity might highlight a mismatch between production capacities and distribution efficiencies. Notably, 32% of the hospital pharmacies in the North region witnessed an increase in demand, potentially reflecting an increased focus on healthcare facilities' preparedness post-COVID.

Reasons for high or low demand post-TMR notification can be multifaceted. High demand might stem from increased awareness of the device's significance, amplified healthcare monitoring, or specific regional health initiatives emphasizing pulse oximetry. Conversely, lower demand could be attributed to market saturation, varying regional healthcare priorities, or limitations in the distribution network's efficacy.

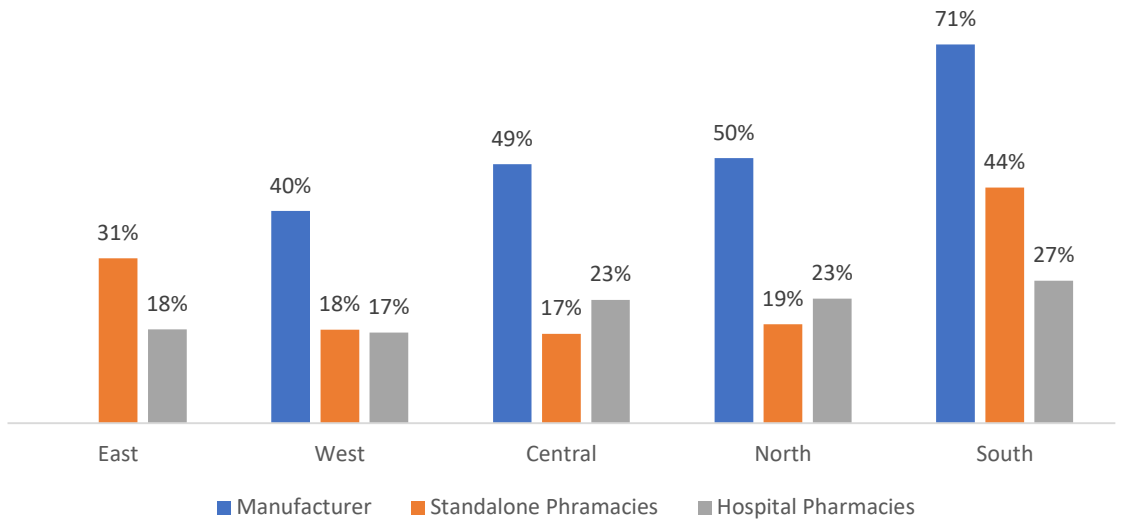


FIGURE 30: REGION WISE PULSE OXIMETER DEMAND CONSISTENCY

Analysing stakeholder perceptions regarding unchanged demand post-COVID, the data reveals nuanced trends. 40% of the Manufacturers in the West witnessed an increase in demand, while only 17% of the hospital pharmacies and 18% of the standalone pharmacies perceived an increase in demand.

In summary, the post-TMR notification demand dynamics for pulse oximeters underscore the influential role of distributors in catering to this heightened need. Regional variations in demand signal complexities influenced by production capacities, distribution efficiencies, and regional healthcare priorities, shaping the accessibility and adoption of these critical medical devices across diverse regions and stakeholders.

7.2.3 Change in Sales for Pulse Oximeter

The provided data illustrates the changes in the sales of Pulse Oximeter Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers, Standalone Pharmacies and Hospital Pharmacies & importers.

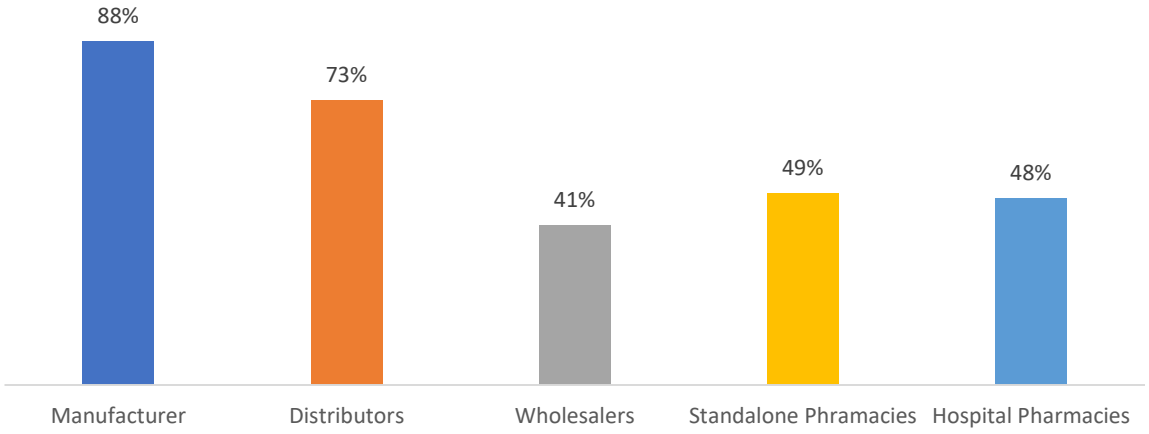


FIGURE 31: CHANGE IN SALES FOR PULSE OXIMETER

In the post-COVID landscape, distributors continue to assert their dominance in the sales of pulse oximeters, with 73% of them witnessed an increase in the overall sales. Their influential role in the distribution network underscores their significance in bridging the gap between manufacturers and end-users, including both standalone pharmacies and hospital pharmacies, facilitating the widespread availability of these crucial medical devices. The trade margin rationalization (TMR) notification issued by NPPA in 2021, imposing a cap on the trade margin for pulse oximeters, signals a substantial shift in the sales dynamics of glucometers. This regulatory intervention may prompt manufacturers and retailers to re-evaluate pricing strategies and market positioning, potentially impacting the competitive landscape and consumer purchasing behaviour within the glucometer sector.

The analysis of importers' data on pulse oximeters following the implementation of the TMR notification witnessed an increase in sales. Approximately 50% of importers perceived a surge in sales for pulse oximeters, indicating a heightened demand for respiratory monitoring devices post-notification. With only 10% respondents indicates a decrease and 39% indicating no change, the data underscores a clear trend towards heightened sales of pulse oximeters among importers. This suggests an increasing emphasis on respiratory health monitoring and proactive healthcare measures in response to the TMR notification, reflecting a shift towards prioritizing respiratory care in healthcare settings.

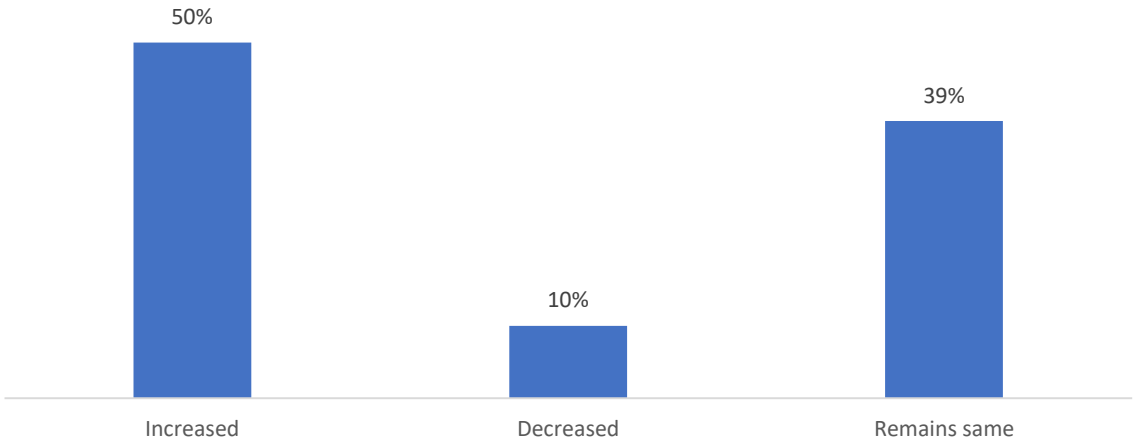


FIGURE 32: IMPORTERS – CHANGE IN SALES PERFORMANCE

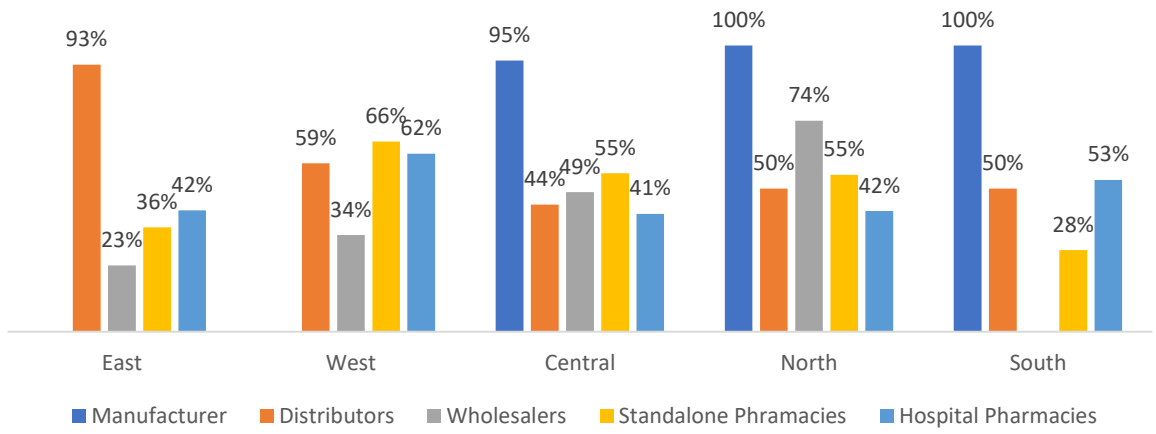


FIGURE 33: REGION WISE CHANGE IN SALES FOR PULSE OXIMETER

Geographically, the sales patterns vary significantly across regions. The Central region emerges as a standout performer, witnessing substantial sales increases across the board. 95% of the Manufacturers in the Central region witnessed a surge in sales, suggesting heightened production or increased demand within this area. 44% of Distributors and 49% of wholesalers also perceived increases in sales, reflecting a robust distribution network and amplified uptake of pulse oximeters within the region. 55% of Standalone pharmacies and 41% of hospital pharmacies in Central witnessed sales increases, showcasing a growing market for these devices in healthcare settings.

Conversely, all respondents in the South exhibited increase in sales dynamics with all the manufacturers and distributors witnessing an increase in sales, but no sales reported by wholesalers. This discrepancy might signal challenges within the distribution network or varying market demands within the South. 28% of the Standalone pharmacies in the South witnessed an increase in sales, while 53% of hospital pharmacies respondents indicates a growth in sales, indicating a greater adoption of pulse oximeters in healthcare settings despite challenges in other Stakeholders.

Reasons for both high and low sales post-TMR can be multifaceted. High sales may be attributed to increased awareness of the device's importance, amplified emphasis on healthcare monitoring post-pandemic, and improved accessibility through distributors and pharmacies. Conversely, factors leading to lower sales might include market saturation, limited accessibility due to distribution constraints, or varying regional healthcare priorities.

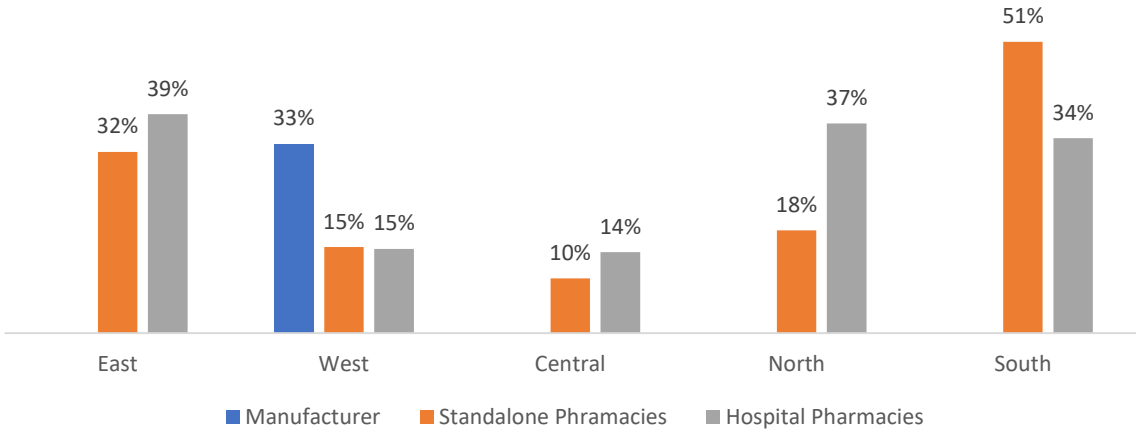


FIGURE 34: REGION WISE PULSE OXIMETER SALES CONSISTENCY

Examining stakeholder perceptions of unchanged sales post-COVID, the data reveals nuanced patterns. Notably, the North region witnessed no change in manufacturer sales, with substantial growth perceived by hospital pharmacies (37%) and moderate increases among standalone pharmacies (18%). In the West, while manufacturers reported no change, whereas only 15% of hospitals and standalone pharmacies noticed an increase in sales.

To summarize, the post-TMR sales landscape for pulse oximeters continues to highlight the influential role of distributors in facilitating access to these essential devices. Regional variations in sales underscore the complexity of market dynamics, influenced by factors such as healthcare infrastructure, distribution efficiency, and consumer behaviours, ultimately shaping the accessibility and adoption of pulse oximeters across diverse regions and stakeholders.

7.2.4 Change in Price for Pulse Oximeter

The provided data illustrates the changes in the price of Pulse Oximeter Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

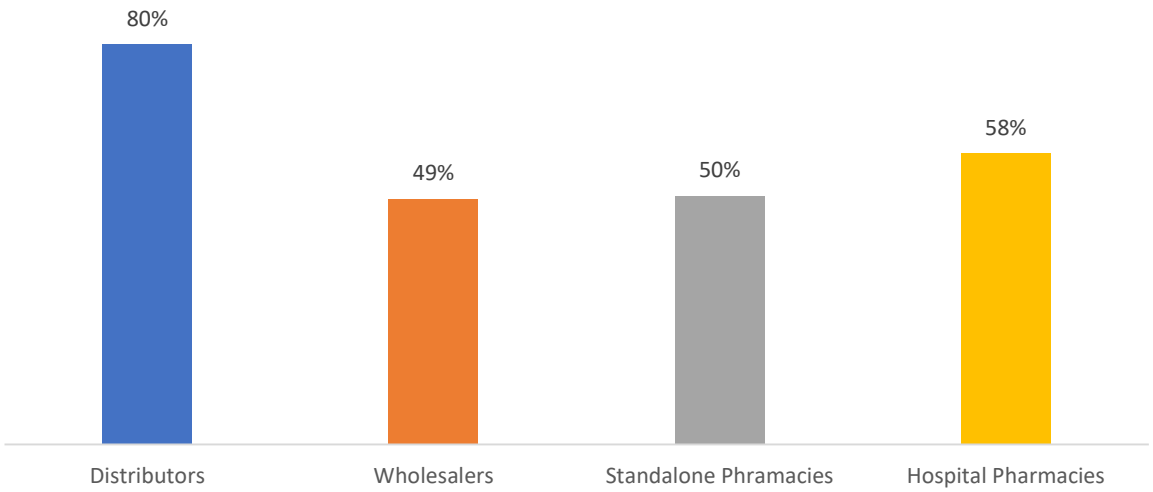


FIGURE 35:CHANGE IN PRICE FOR PULSE OXIMETER

In the post-COVID scenario, 80% of the Distributors witnessed an increase in cost, and were most affected by the price changes for pulse oximeters. This large proportion indicates their substantial role in setting and altering prices within the distribution network, impacting the cost structure from manufacturers to various endpoints like standalone pharmacies and hospital pharmacies.

The data illustrates a notable high proportion of respondents indicates an increase in costs for pulse oximeters among various stakeholders subsequent to the TMR notification. With 80% of distributors, 49% of wholesalers, 50% of standalone pharmacies, and 58% of hospital pharmacies respondents witnessed an increase in costs, there's a clear trend towards pressure on margins throughout the distribution chain. This perceived increase in costs is likely to affect accessibility for both healthcare facilities and individuals seeking reliable oxygen saturation monitoring. The findings suggest a positive outcome of the TMR notification, as it succeeds in its objective to make essential medical devices like pulse oximeters more accessible and affordable across different healthcare settings.

The analysis of importers' data on pulse oximeters since the implementation of the TMR notification perceived a significant increase in costs, with 8% of importers witnessed an increase. This price increase likely contributes to greater pressure on margins for intermediaries of pulse oximeters, as higher costs for these vital medical devices reduces the profits for them. With only 59% reporting an decreased in costs and 33% indicating no change, the data underscores the effectiveness of the TMR notification in positively impacting accessibility and affordability in healthcare. This reflects a positive outcome of the TMR notification, aligning with its objective to enhance access to essential medical devices like pulse oximeters.

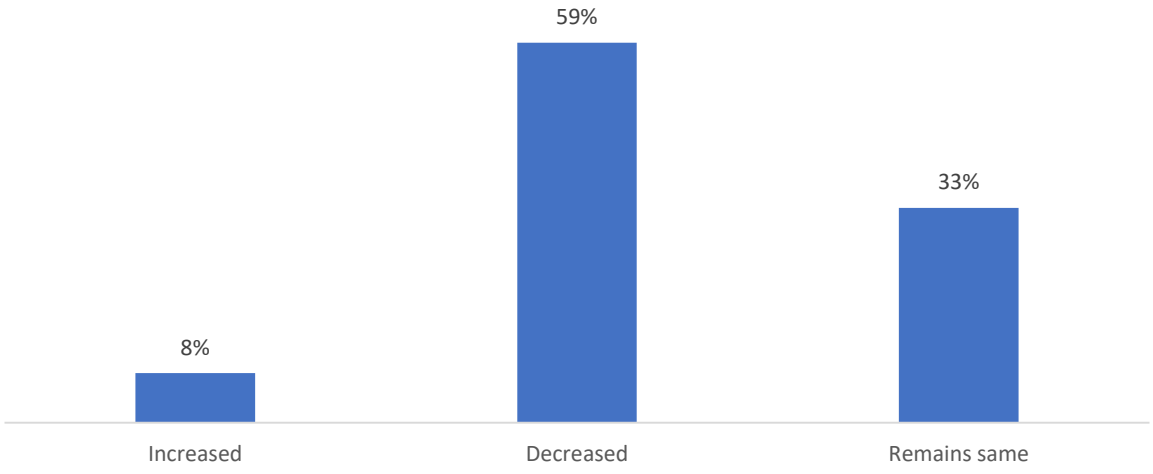


FIGURE 36: IMPORTERS – PRICING PERCEPTION

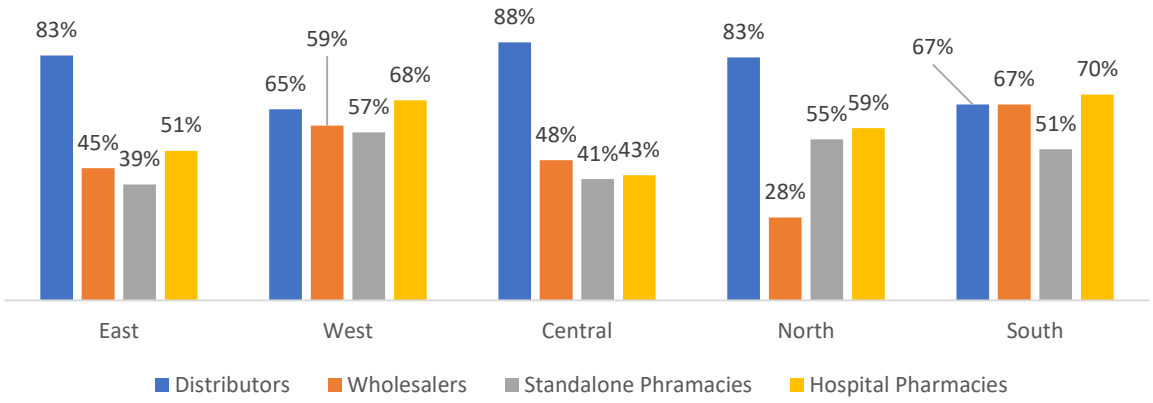


FIGURE 37: REGION WISE CHANGE IN PRICE FOR PULSE OXIMETER

Geographically, distinct price dynamics are apparent across regions. The Central region exhibits the most significant cost increases across stakeholders. 88% of the Distributors in Central witnessed an increase in costs, indicating considerable adjustments in the cost structure within the distribution chain. However, only 48% of the wholesalers in Central perceived an increase in costs, potentially indicating a more controlled pricing strategy or potential challenges in the wholesale market dynamics.

Conversely, 83% of the distributors in the North region witnessed an increase in costs, significantly influencing the pricing structure within the region. Yet only 28% of the wholesalers in the North witnessed an increase in costs, hinting at potential variations in the pricing strategies or market dynamics influencing wholesale prices.

Reasons for the increase in costs can be diverse, influenced by factors such as increased production costs, heightened demand, supply chain disruptions, or changes in market dynamics post-COVID. The increased reliance on pulse oximeters during and post-pandemic might have triggered an uptick in demand, thus leading to price adjustments by stakeholders to meet this increased need.

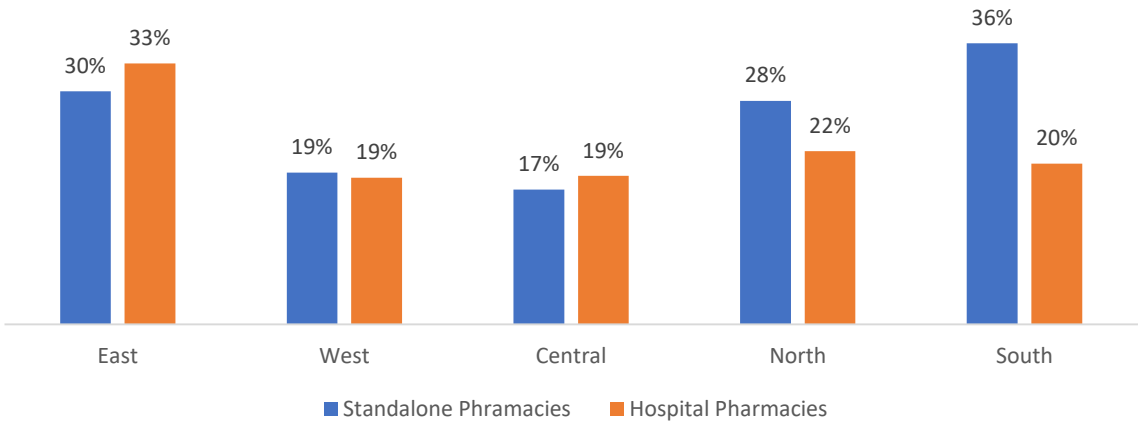


FIGURE 38: REGION WISE PULSE OXIMETER SALES CONSISTENCY

Analysing stakeholder perceptions regarding unchanged prices post-COVID, the data indicates nuanced patterns. Standalone pharmacies and hospital pharmacies in different regions perceived varying levels of stability in prices, with some witnessing minor changes but overall demonstrating a relatively stable pricing environment.

In summary, the post-TMR notification landscape for pulse oximeter prices underscores the significant influence of distributors in shaping the cost structure. Regional variations in cost changes suggest diverse market dynamics, potentially influenced by production costs, distribution efficiency, or changes in demand and supply dynamics in different regions.

7.2.5 Change in Quality for Pulse Oximeter

The provided data illustrates the changes in the quality for Pulse Oximeter Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

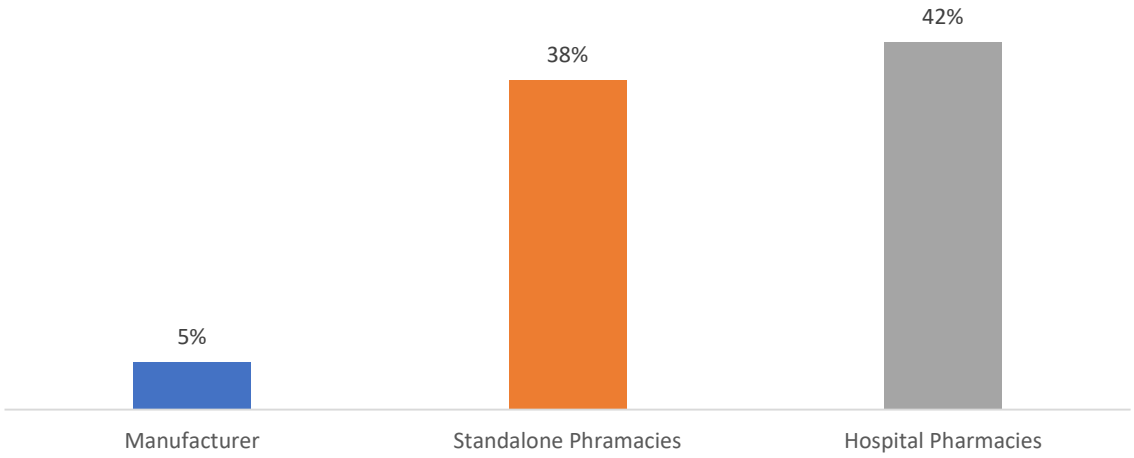


FIGURE 39:CHANGE IN QUALITY FOR PULSE OXIMETER

In the realm of post-COVID changes in pulse oximeter quality, hospital pharmacies emerge as the leading stakeholders, with 42% of them witnessed a substantial increase in quality. This significance underscores their role in ensuring higher standards of quality in these medical devices compared to other stakeholders such as manufacturers and standalone pharmacies. The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which imposes a cap on the trade margin for pulse oximeters, indicates a substantial alteration in the quality standards of pulse oximeters. This regulatory measure underscores the importance of ensuring reliable and accurate healthcare devices for consumers, potentially leading to enhanced trust and confidence in pulse oximeter products among users and healthcare providers alike.

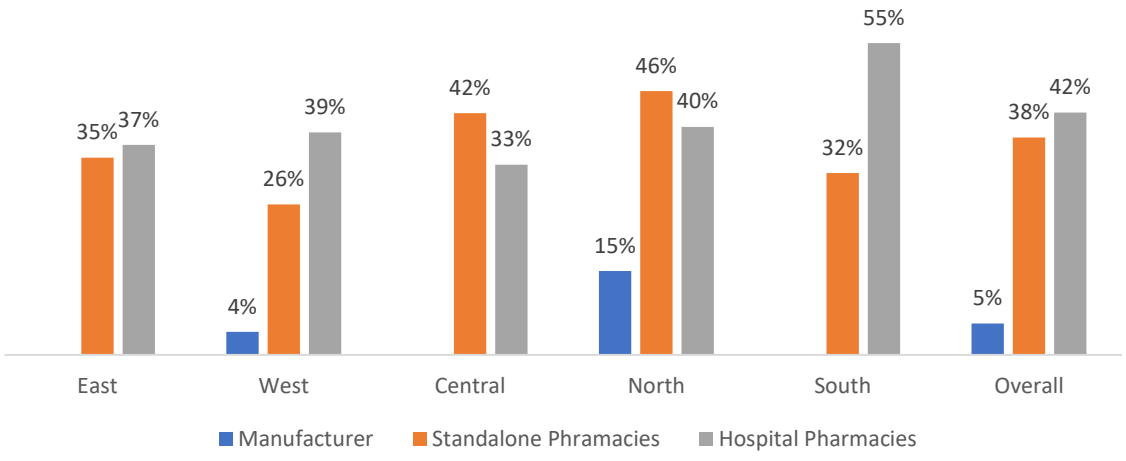


FIGURE 40: REGION WISE CHANGE IN QUALITY FOR PULSE OXIMETER

Geographically, distinct quality enhancements are evident across regions. The North region witnessed with the most substantial quality improvements. While 15% of the Manufacturers in the North witnessed a considerable increase in quality, this aligned with 40% of hospital pharmacies, which recorded an enhancement in quality. This suggests a concerted effort in the North to elevate the quality standards of pulse oximeters, potentially driven by healthcare facilities' requirements for improved accuracy and reliability in these devices.

Conversely, the Central region witnessed lower changes in quality compared to other regions. Manufacturers and hospital pharmacies in Central respondents indicates relatively minimal increases in quality, hinting at potential challenges or less emphasis on enhancing the pulse oximeter quality compared to other regions.

Reasons for the changes in quality can vary, driven by factors such as technological advancements, market demands for higher accuracy, or feedback from healthcare providers. Post-COVID, there might have been increased scrutiny on the accuracy and reliability of medical devices, prompting stakeholders, especially hospital pharmacies, to prioritize and invest in improving the quality standards of pulse oximeters.

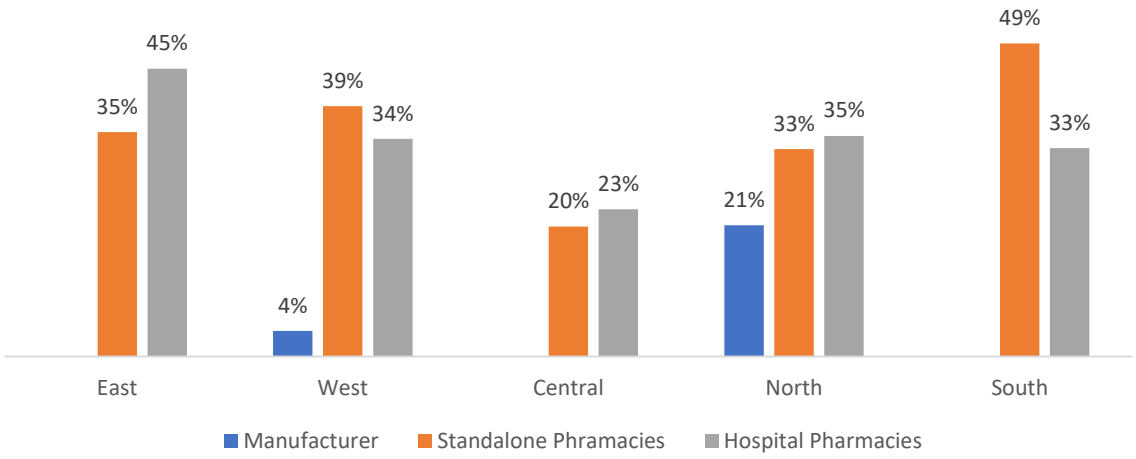


FIGURE 41: REGION WISE PULSE OXIMETER QUALITY CONSISTENCY

Analysing stakeholder perceptions regarding unchanged quality post-COVID, the data indicates varying levels of stability across regions and stakeholders. Standalone pharmacies in different regions witnessed varying levels of consistency in quality changes, while hospital pharmacies in most regions demonstrated a consistent push to maintain or improve quality post-pandemic.

In summary, the post-TMR landscape for pulse oximeter quality suggests a noticeable focus on enhancing quality, particularly in regions like the North. Hospital pharmacies appear to lead this effort, emphasizing the importance of accurate and reliable medical devices, potentially driven by increased demand for higher-quality healthcare tools in the post-pandemic era.

To conclude, the insights gathered from the comprehensive analysis of pulse oximeter metrics—supply, sales, demand, price changes, and quality improvements—provide a holistic view of the device's landscape post-COVID. Distributors notably emerge as pivotal players across these metrics, indicating their influential role in ensuring the availability and accessibility of pulse oximeters nationwide. Their dominance in supply, sales, and demand highlights their efficient bridging of gaps between manufacturers and end-users, fostering widespread access to these essential devices.

Geographical variations in these metrics showcase diverse market dynamics. Regions like Central and North demonstrate heightened activity across different parameters, indicating potential hotspots for both supply and demand. Central stands out with substantial supply and sales figures, suggesting a robust infrastructure and increased healthcare facility demand. Conversely, discrepancies in supply and sales, as seen in the West and South, might signal distribution challenges or varied regional healthcare priorities affecting accessibility.

Changes in price are notably influenced by distributors, highlighting their significant role in cost structures. However, regional disparities in cost changes might stem from diverse factors, including supply chain disruptions, fluctuating demand, or differing market regulations. Quality improvements, primarily driven by hospital pharmacies, reflect a collective effort to enhance device accuracy and reliability, ensuring higher standards nationwide.

The correlation between these parameters showcases an intricate interplay. For instance, increased demand might trigger cost hikes due to heightened market activity, while supply chain disruptions might hinder availability despite the demand surge. Nevertheless, these insights collectively present a positive outlook, indicating efforts to enhance availability, accessibility, and quality of pulse oximeters post-TMR notification.

To bolster this positive trend further, optimizing distribution networks, addressing supply chain disruptions, and fostering collaboration among stakeholders could improve availability and affordability nationwide. Encouraging localized manufacturing or distribution initiatives and incentivizing quality improvements could ensure a more equitable distribution and accessibility of pulse oximeters across diverse geographic regions, promoting better healthcare outcomes for all.

7.3 Digital Thermometer

The primary examination focused on Digital Thermometer, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.3.1 Change in Supply for Digital Thermometer

The provided data illustrates the changes in the supply for Digital Thermometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

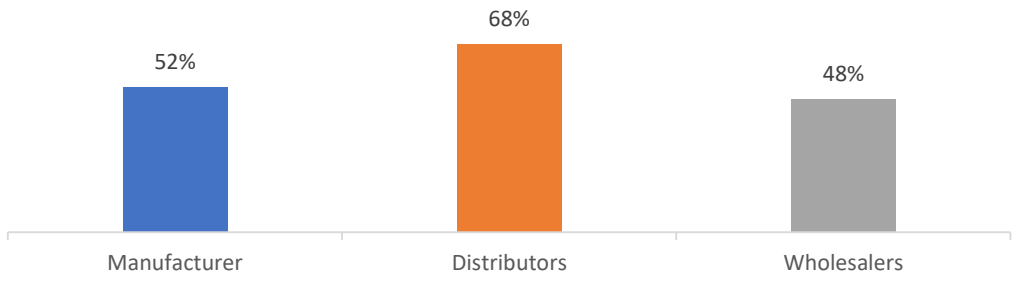


FIGURE 42: CHANGE IN SUPPLY FOR DIGITAL THERMOMETER

In the overall percentage analysis of the digital thermometer supply data, distributors stand out as the key role players with a substantial 68% of them witnessing an increase in supply in the post-COVID supply chain. Manufacturers follow closely behind, with 52% of them perceiving an increase in supply. 48% of Wholesalers noticed an increase in supply. The Trade Margin Rationalization (TMR) notification issued by NPPA in 2021, which sets a cap on the trade margin for digital thermometers, signifies a notable shift in the availability of these healthcare devices. This regulatory action aims to streamline pricing structures and improve accessibility to digital thermometers, potentially reshaping the market dynamics and ensuring wider availability in the market.

In the digital thermometer supply chain, manufacturers are the initial link responsible for production. Distributors serve as intermediaries between manufacturers and downstream stakeholders, ensuring the products reach various healthcare providers, pharmacies, and end-users. Wholesalers play a supportive role by facilitating bulk transfers between manufacturers and distributors. This value chain ensures a smooth flow of digital thermometers from production through distribution to end-users, contributing to the accessibility of essential medical devices in the post-COVID healthcare landscape.

The data illustrates notable supply chain challenges for Digital Thermometers Post-COVID-19 pandemic, including 49% respondents witnessing increase in lead times, 30% of respondents witnessing difficulty in sourcing raw materials, 14% of respondents witnessing delays in shipping, and 7% of respondents witnessing disruptions in manufacturing for importers. These difficulties resulted in limited availability and escalated costs for Digital Thermometers. In response, the Trade Margin Rationalization notification played a pivotal role in mitigating the impact by rationalizing trade margins and ensuring more stable pricing structures for Digital Thermometers. This regulatory intervention helped stabilize the market, ensuring continued access to Digital Thermometers despite the supply chain disruptions caused by the pandemic.

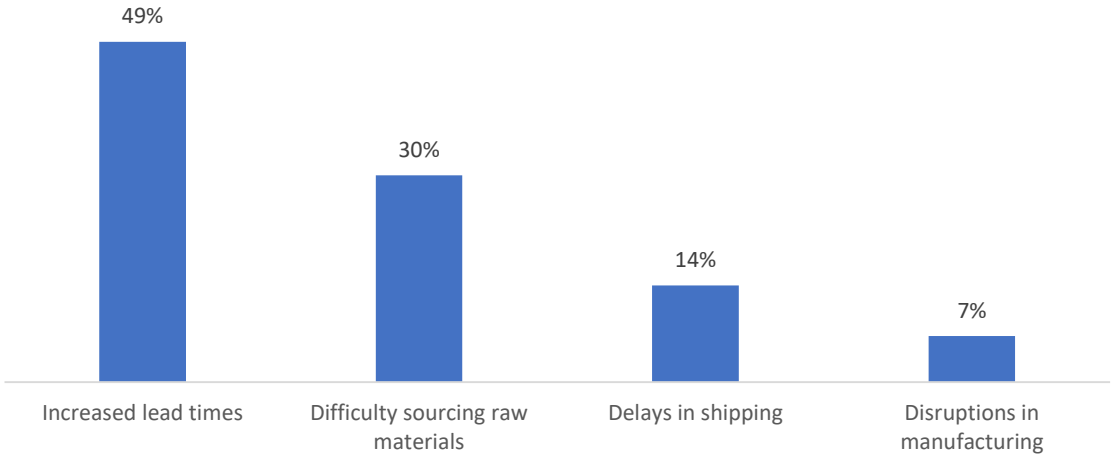


FIGURE 43: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

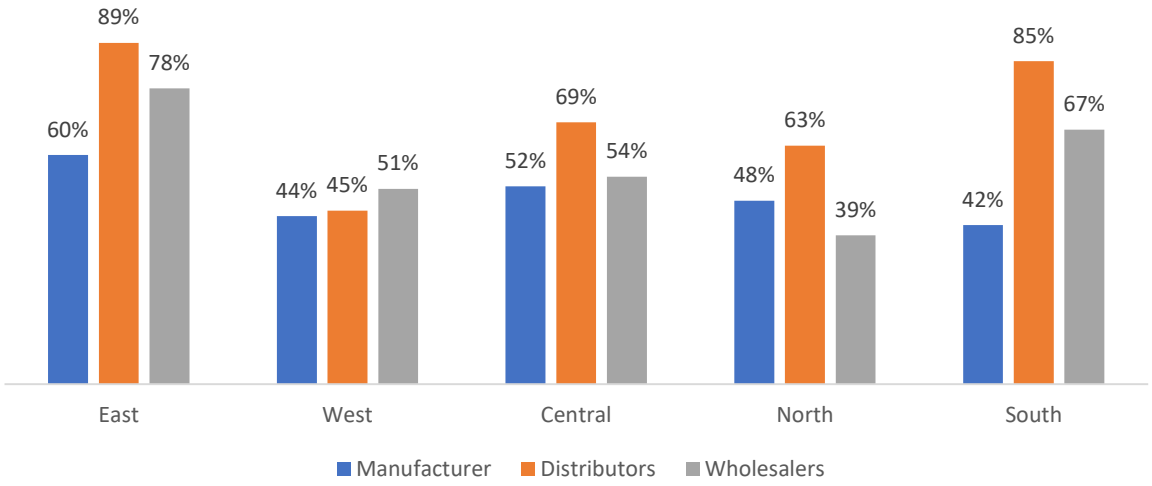


FIGURE 44: REGION WISE CHANGE IN SUPPLY FOR DIGITAL THERMOMETER

In the East region, 89% of distributors for digital thermometers witnessed an increase in supply, showcasing the strength of distribution networks. Similarly, 79% of the Manufacturers witnessed an increase in their supply %, indicating the increase in local production.

The West region demonstrates a balanced supply among distributors, manufacturers, and wholesalers with 44%, 45% and 51% of respondents indicating an increase in supply. This balance signifies effective supply chain management, with healthcare providers accessing digital thermometers from various sources.

In the Central region, 69% of the Distributors indicated an increase in supply, which indicates the efficiency distributing digital thermometers to various stakeholders, whereas 42% of the Manufacturers indicating an increase in supply, showcasing the importance of local production.

63% of the Distributors indicated increased supply in the Northern region, while 48% of the manufacturers indicated an increase in supply. Hospital pharmacies here are more self-reliant, with a lower 39% of wholesalers indicating an increase in supply.

85% of the distributors in the South region, and 67% of the wholesalers witnessed an increase in the supply of digital thermometers.

In conclusion, distributors play a central role in the supply of digital thermometers post-TMR notification, working closely with manufacturers and wholesalers to ensure product availability. Variations across regions reflect the unique dynamics of each area, influenced by factors such as demand and distribution networks. Despite supply chain disruptions during the pandemic, many stakeholders managed to maintain consistent supply levels, underscoring the resilience of the supply chain.

7.3.2 Change in Demand for Digital Thermometer

The provided data illustrates the changes in the supply for Digital Thermometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

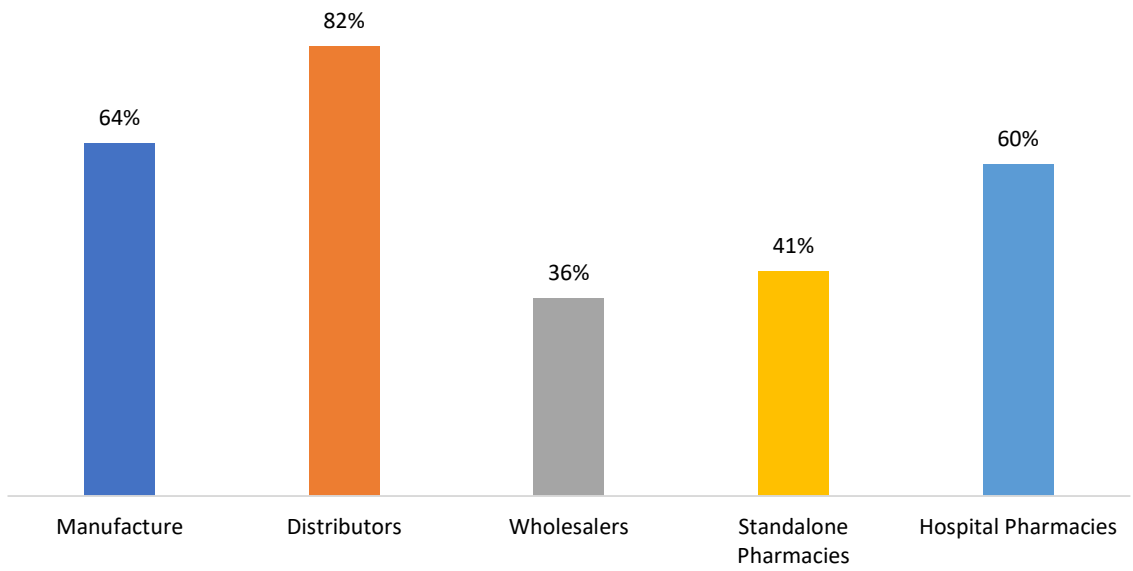


FIGURE 45: CHANGE IN DEMAND FOR DIGITAL THERMOMETER

In the post Covid landscape, distributors lead the way with the highest indication of overall demand increase at 82%, signifying their crucial role in meeting the heightened demand for digital thermometers in the post-COVID era. Manufacturers also witnessed a demand increase, with 64% indicating an increase, highlighting their efforts to ramp up production. With 60% of Hospital pharmacies exhibiting demand increase among end-users, thus underlining their importance in the healthcare supply chain. 41% and 36% of standalone pharmacies and wholesalers witnessing an increase in demand, respectively. The Trade Margin Rationalization (TMR) notification implemented by NPPA in 2021, which imposes a cap on the trade margin for digital thermometers, indicates a notable transformation in the demand for these medical devices. This regulatory measure is anticipated to influence consumer purchasing patterns and market dynamics, potentially reshaping the landscape of digital thermometer sales and distribution channels.

This value chain ensures the smooth flow of digital thermometers from production through distribution to end-users, meeting the heightened demand for these essential medical devices in the post-COVID healthcare landscape.

Since the implementation of the TMR notification, importers have witnessed a notable increase in demand for digital thermometers. A significant 62% of importers witnessed a surge in demand for these medical devices, indicating a heightened need for accurate temperature monitoring in the wake of the notification. With only 11% witnessed a decrease and 27% indicating no change, the data suggests a pronounced shift towards digital thermometers among consumers and healthcare providers, emphasizing the growing importance of accurate temperature measurement in healthcare settings post-TMR notification.

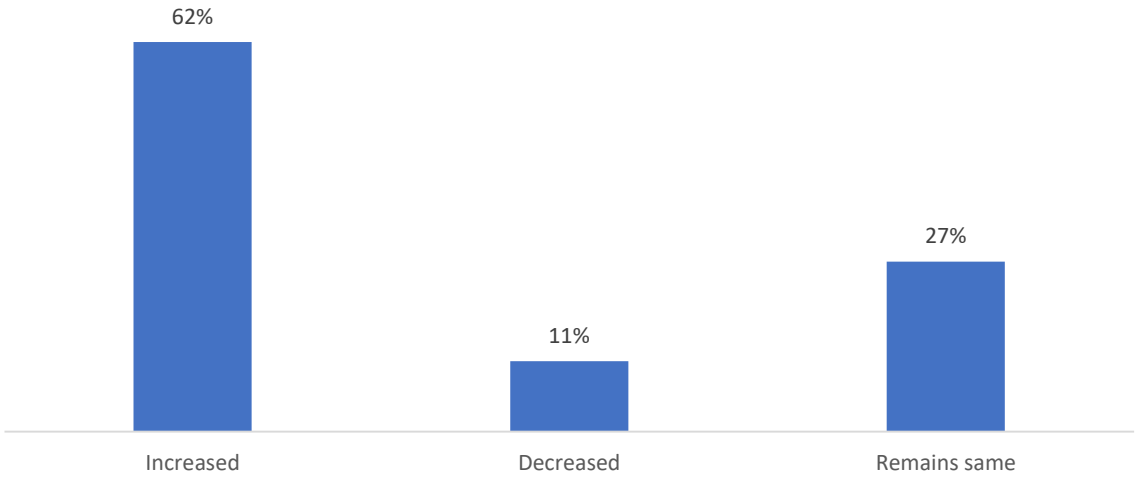


FIGURE 46: IMPORTERS – CHANGE IN DEMAND

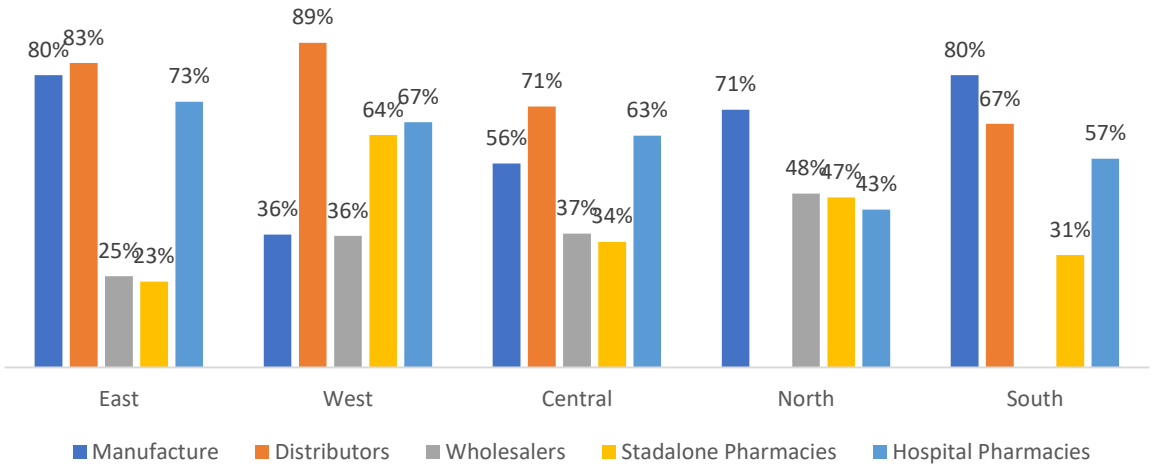


FIGURE 47: REGION WISE CHANGE IN DEMAND FOR DIGITAL THERMOMETER

In the Eastern region, there has been a notable surge in demand across the board. 80% of the Manufacturers witnessed an increase in demand, indicating a substantial production response to meet the rising need for digital thermometers. 83% of the Distributors also perceived a robust demand increase, emphasizing their critical role in distribution. Among end-users, 73% of hospital pharmacies

witnessed a significant surge in demand, highlighting their importance in healthcare delivery. 23% and 25% of standalone pharmacies and wholesalers showed demand increases, respectively.

In the Western region, the demand landscape is characterized by a balanced increase across stakeholders. Distributors witnessed with 89% of them indicating a demand increase, indicating their role in efficiently meeting the market demand for digital thermometers. 36% of Manufacturers responded that there was an increase in demand, reflecting their commitment to production. A large proportion of Hospital pharmacies (67%) also witnessed a rise in demand, highlighting their significance in healthcare delivery. 64% and 36% of standalone pharmacies and wholesalers witnessed a demand increase, respectively. This balanced distribution suggests a robust market for digital thermometers in the West.

Central India respondents indicates a noteworthy demand increase for digital thermometers. 56% of the Manufacturers in this region perceived an increase in demand, indicating a proactive approach to production. With 71% of the Distributors witnessing an increase in demand, they also played a crucial role in ensuring the distribution network remains efficient. 63% of Hospital pharmacies in Central India witnessed a significant surge in demand, underlining their importance in healthcare delivery. 34% and 37% of standalone pharmacies and wholesalers' respondents indicates demand increases, respectively, contributing to the overall accessibility of these devices in the region.

The Northern region shows mixed data, with a significant 71% of manufactures witnessing demand increase . 43% of Hospital pharmacies in the North noticed a rise in demand , indicating the importance of healthcare facilities in addressing the need for digital thermometers. 47% and 48% of standalone pharmacies and wholesalers witnessed demand increases, respectively. The region's healthcare dynamics may have led to this diverse demand pattern.

In the Southern region, 80% of the manufacturers witnessed an increase in demand, indicating a robust local production capacity. 67% of Distributors witnessed an increase in demand, ensuring efficient product flow. 57% of the Hospital pharmacies in the South witnessed a notable surge in demand, emphasizing their significance in healthcare delivery. 31% of standalone pharmacies demonstrated demand increases showing stability rather than a significant surge.

In conclusion, the data underscores the increased demand for digital thermometers post-TMR notification, with distributors and manufacturers being central to meeting this demand. Regional variations in demand reflect differences in healthcare infrastructure and population needs, while hospital pharmacies emerge as significant consumers in this context. The value chain efficiently facilitates the flow of products from production to end-users, ensuring accessibility during these critical times.

7.3.3 Change in Sales for Digital Thermometer

The provided data illustrates the changes in the sales of Digital Thermometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

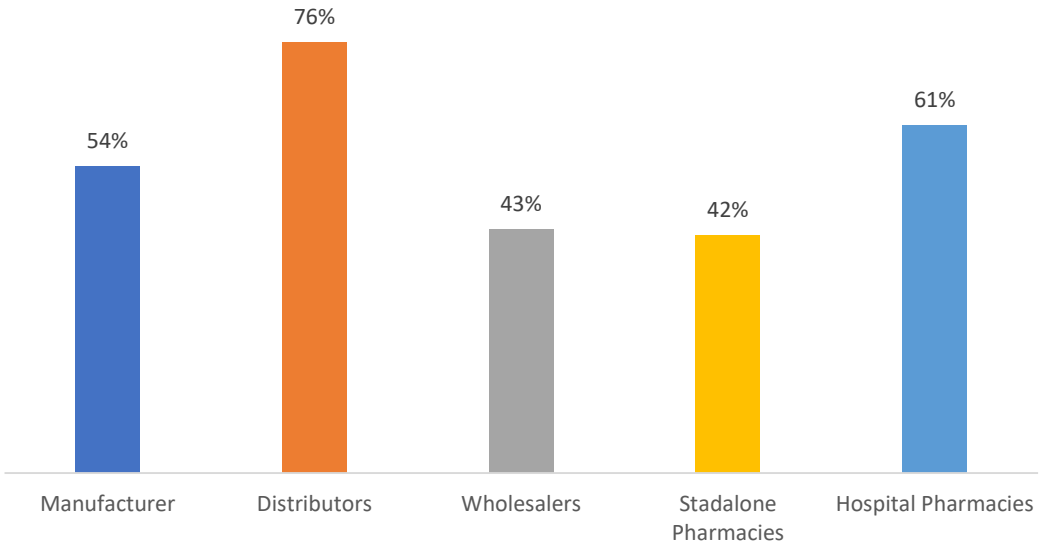


FIGURE 48: CHANGE IN SALES FOR DIGITAL THERMOMETER

In the Post Covid landscape, Distributors emerge as the most influential stakeholders in driving sales, with a significant 76% of them witnessing an overall increase in sales. A majority of manufacturers (54%) also witnessed increased sales, but to a lesser extent. Among end-users, 61% of hospital pharmacies perceived an increase in sales, while 42% of standalone pharmacies indicated a growth in sales. About 43% of Wholesalers witnessed a sales increase. The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which enforces a cap on the trade margin for digital thermometers, reflects a notable shift in the sales trends of these devices. This regulatory measure is expected to impact the market dynamics and consumer behavior, potentially influencing the volume and distribution of digital thermometer sales across various sectors.

In the value chain for digital thermometers, manufacturers produce the devices, and their sales strategies affect the overall supply. Distributors serve as crucial intermediaries, connecting manufacturers to various stakeholders, including hospitals, standalone pharmacies, and wholesalers. Hospitals and standalone pharmacies, as end-users, play a significant role in driving sales by ensuring the accessibility of these medical devices to patients and healthcare providers.

The implementation of the TMR notification witnessed a significant increase in sales. Approximately 51% of importers noticed a surge in sales for digital thermometers, highlighting a heightened demand for accurate temperature monitoring post-notification. With only 12% witnessing a decrease and 37% indicating no change, the data suggests a clear trend towards increased sales of digital thermometers among importers. This reflects a growing emphasis on healthcare monitoring and infection control measures, indicating a notable shift in consumer behavior and healthcare priorities in response to the TMR notification.

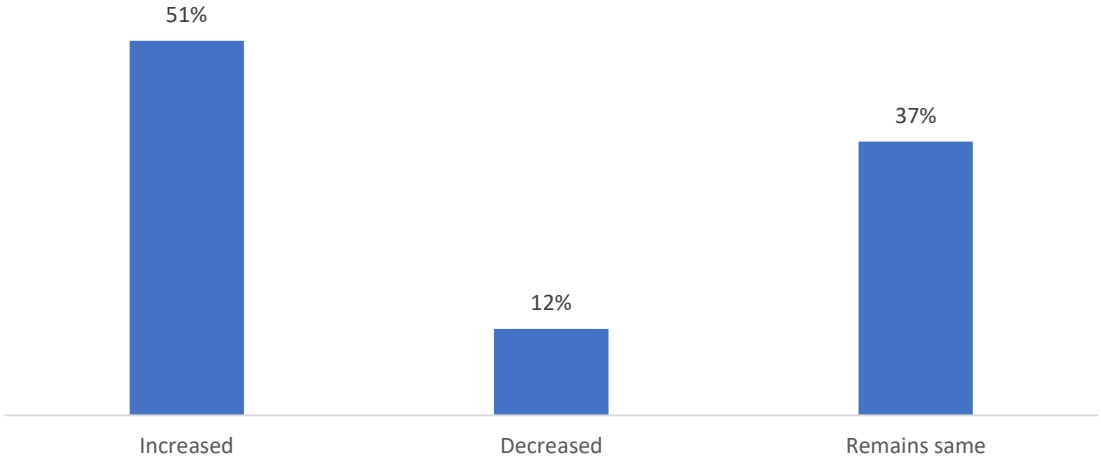


FIGURE 49: IMPORTERS – CHANGE IN SALES PERFORMANCE

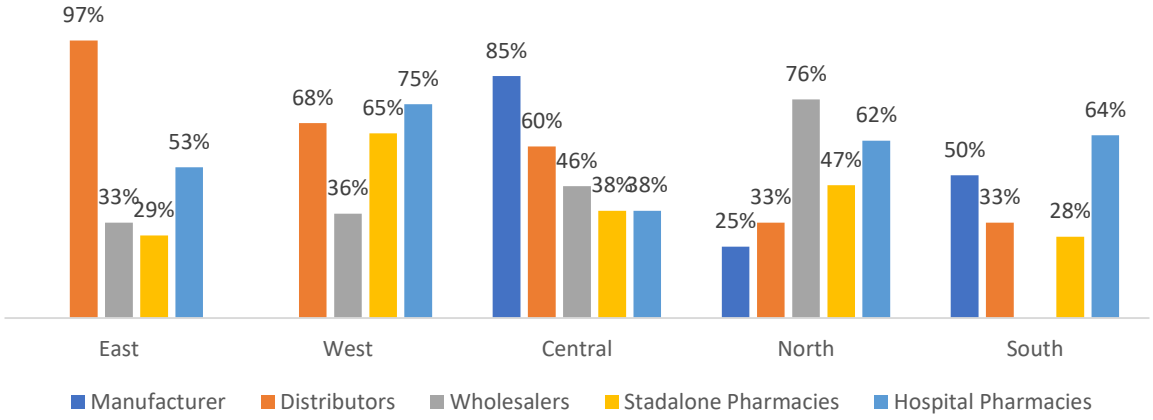


FIGURE 50: REGION WISE CHANGE IN SALES FOR DIGITAL THERMOMETER

In the Eastern region, there is a substantial emphasis on sales growth, particularly driven by distributors, witnessing 97% increase. Unfortunately, data for manufacturers is not statistically significant. Hospital pharmacies also witnessed a 53% increase in sales, highlighting their importance in ensuring access to these essential medical devices. Standalone pharmacies and wholesalers have contributed to overall sales growth, with increases of 29% and 33%, respectively. This suggests a concerted effort in the East to meet the rising demand for digital thermometers.

The Western region shows a dynamic sales landscape, distributors are pivotal in driving sales growth, with a substantial 68% of them witnessed an increase, Hospital pharmacies lead among end-users with a remarkable 75% of them witnessed a sales increase, closely followed by standalone pharmacies where 65% of them perceived a sales increase. Wholesalers also contribute to overall sales growth, with 36% of them witnessing an increase in sales. However, with no change in manufacturer sales. This data underscores the region's commitment to ensuring the accessibility of digital thermometers in the post-COVID era.

Central India demonstrates a proactive approach to meet demand, with an impressive 85% of manufacturers witnessed an increase in sales. 60% of Distributors and 38% of hospital pharmacies also witnessed an increase in sales. 38% of standalone pharmacies and 46% of wholesalers had an overall

sales growth post TMR notification, respectively. The region's commitment to providing access to digital thermometers is evident through these sales figures.

In the Northern region, wholesalers play a key role in sales of the Digital Thermometer with 76% of respondents indicated increasing sales. Similarly, 62% of hospitals pharmacies also witnessed an increase in sales, while 25% of manufacturers witnessed an increase in sales. This reflects a collective effort to meet the rising demand for digital thermometers in the post-COVID landscape.

The Southern region showcases a unique sales pattern with 50% of the manufacturers witnessing increasing their sales. 33% of distributors and 64% of hospital pharmacies also witnessed a substantial sales growth. About 28% of standalone pharmacies had an increase, although wholesalers show no change in sales. This data emphasizes the region's commitment to ensuring access to essential medical devices like digital thermometers.

Sales variations can be attributed to factors such as changes in demand, supply chain disruptions during the pandemic, competitive pricing strategies, and local market dynamics. Distributors often function as intermediaries, effectively reaching healthcare providers and pharmacies, which can influence sales.

In summary, the data highlights the pivotal role of distributors in driving sales growth for digital thermometer devices post-TMR notification, with substantial contributions from hospital pharmacies and manufacturers. The value chain efficiently ensures the flow of products from production to distribution, ensuring accessibility to these critical medical devices in the changing healthcare landscape.

7.3.4 Change in Price for Digital Thermometer

The provided data illustrates the changes in the price of Digital Thermometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

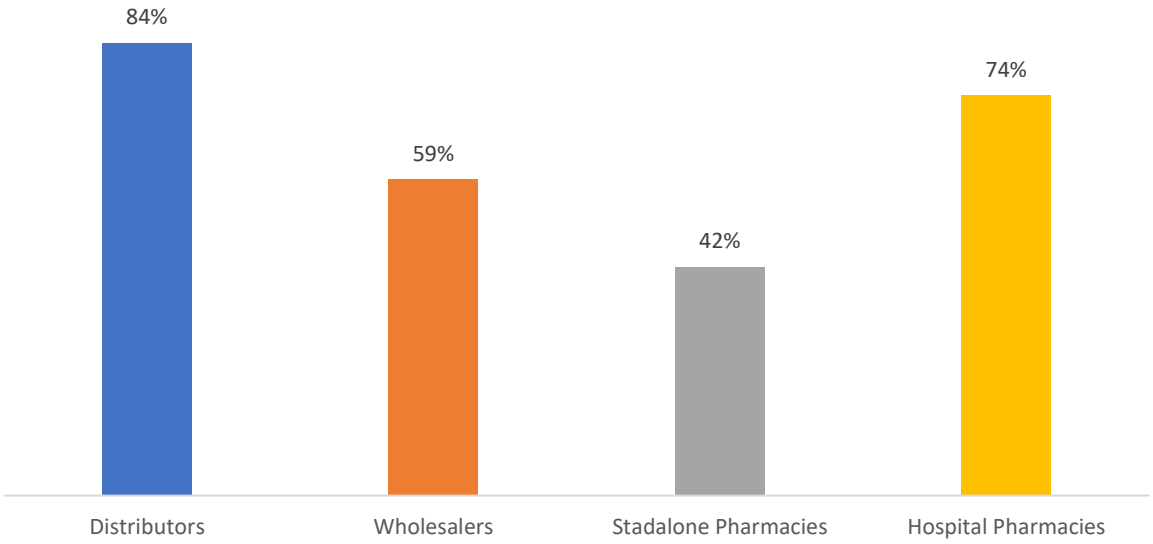


FIGURE 51:CHANGE IN PRICE FOR DIGITAL THERMOMETER

In the post Covid landscape a majority of distributors (84%) showed that their costs had increased. This underscores their pressure on the margins and final retail price of digital thermometers, as they are crucial intermediaries in the distribution network. Wholesalers witnessed a moderate cost increase with 59% of them indicating an increase, even while they facilitate the transfer of products between

manufacturers and distributors. 74% of hospital pharmacies, and 42% of standalone pharmacies, indicated a cost decrease, representing the end-users in this chain. Their pricing dynamics are influenced by factors such as market competition, distribution costs, and local market conditions. The Trade Margin Rationalization (TMR) notification issued by NPPA in 2021, which imposes a cap on the trade margin for digital thermometers, indicates a notable alteration in the pricing structure of these healthcare devices. This regulatory intervention is poised to impact the affordability and accessibility of digital thermometers for consumers, potentially fostering more equitable pricing practices within the market.

For digital thermometers across various stakeholders following the TMR notification. With 84% of distributors, 59% of wholesalers, 42% of retailers, and 74% of hospitals witnessed an increase in prices, there's a widespread trend towards increased affordability since the distribution network absorbs the costs. The findings suggest a positive impact of the TMR notification, as it effectively contributes to making essential medical devices like digital thermometers more accessible and affordable across different healthcare sectors.

This value chain ensures the efficient flow of digital thermometers from production through distribution to end-users, with pricing adjustments occurring at various stages based on the strategies and influence of stakeholders.

Since the implementation of the TMR notification, it reveals a significant decrease in prices, with 59% of importers witnessing a reduction. This costs decline likely contributes to increased demand and sales of digital thermometers, as lower prices enhance accessibility for consumers. With only 5% witnessed an increase in prices and 36% indicating no change, the data underscores the effectiveness of the TMR notification in positively influencing affordability and accessibility in healthcare. This reflects a favorable outcome of the TMR notification, aligning with its goal to improve access to essential medical devices like digital thermometers.

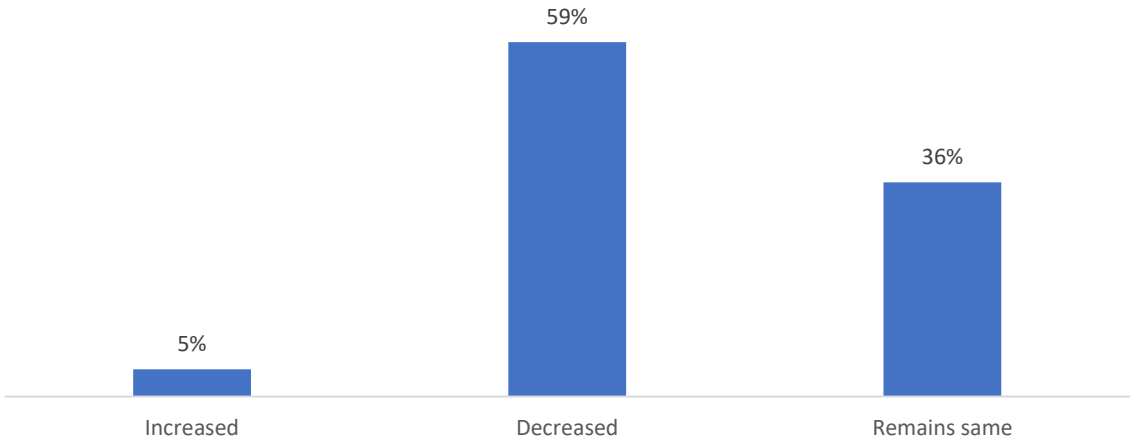


FIGURE 52: IMPORTERS – PRICING PERCEPTION

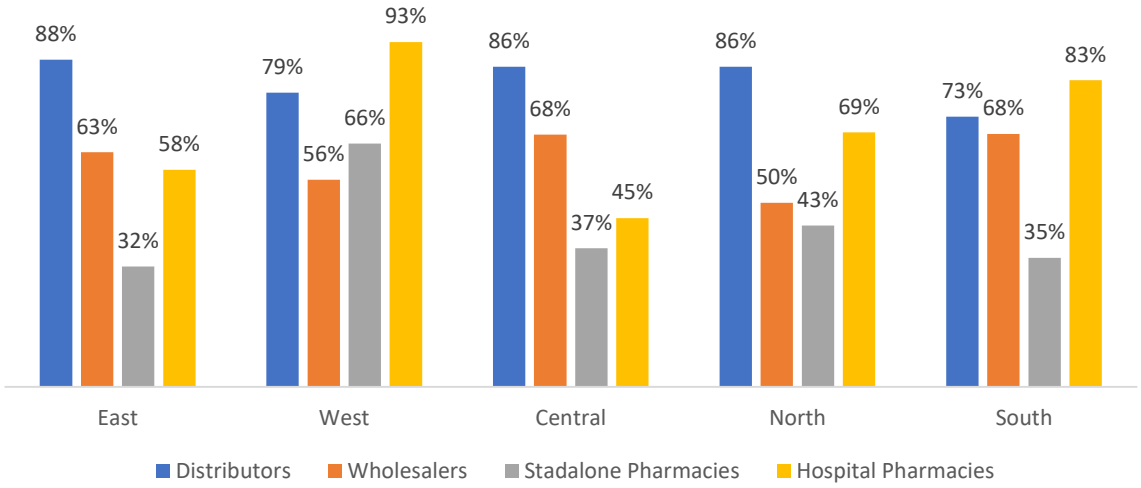


FIGURE 53: REGION WISE CHANGE IN PRICE FOR DIGITAL THERMOMETER

In the Eastern region, 88% of the distributors have shown that costs have increased for digital thermometers. 58% of hospital pharmacies also experienced an increase in costs. 32% of standalone pharmacies and 63% of wholesalers witnessed cost increases. The Eastern region's pricing landscape indicates the significant role played by distributors in influencing the final retail cost of these medical devices, with hospital pharmacies facing moderate price adjustments.

In the Western region, the influence of distributors is again evident, with 79% of them witnessing an increase in cost. 93% of hospital pharmacies, on the other hand, exhibited the most substantial price surge among end-users. 66% of standalone pharmacies and 56% of wholesalers witnessed price increases. This region's pricing dynamics demonstrate the critical role of distributors and the pronounced price adjustments seen in hospital pharmacies.

Central India witnessed notable cost increases with 86% of distributors indicating an increase in costs. 45% of hospital pharmacies witnessed a moderate price increase. 37% of standalone pharmacies witnessed price increases. The Central region's pricing pattern highlights the impact of distributors on pricing dynamics, while hospital pharmacies face moderate adjustments.

In the Northern region, 86% of distributors continue to have a significant impact on cost increases. 69% of hospital pharmacies experience an increase in cost, reflecting their role in healthcare delivery. 43% of standalone pharmacies and 50% of wholesalers exhibited an increase in cost. The Northern region's pricing landscape indicates the influence of distributors and the importance of hospital pharmacies in price dynamics.

The Southern region demonstrates pricing dynamics influenced with 73% of distributors indicating an increase in costs. 83% of hospital pharmacies witnessed a significant cost surge. 35% of standalone pharmacies and 68% of wholesalers perceived an increase in costs. This region’s pricing pattern underscores the impact of distributors on pricing adjustments, particularly in hospital pharmacies.

In the value chain for digital thermometers, this value chain ensures the flow of products from production to end-users, with pricing influenced at various stages by stakeholders.

In conclusion, the data highlights the influence of distributors in price adjustments for digital thermometers post-TMR notification, with substantial cost increases seen in various regions. Manufacturers produce the devices, and their pricing strategies affect the overall cost structure. Distributors serve as intermediaries, influencing pricing through their distribution costs and market

positioning. Wholesalers facilitate bulk transfers between manufacturers and distributors. Hospitals and standalone pharmacies, as end-users, may experience price adjustments based on market dynamics and distribution expenses. Hospital pharmacies also experience significant price rises among end-users. The value chain efficiently facilitates the flow of products from production through distribution, with pricing dynamics influenced by factors such as distribution costs and local market conditions.

7.3.5 Change in Quality for Digital Thermometer

The provided data illustrates the changes in the quality of Digital Thermometer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

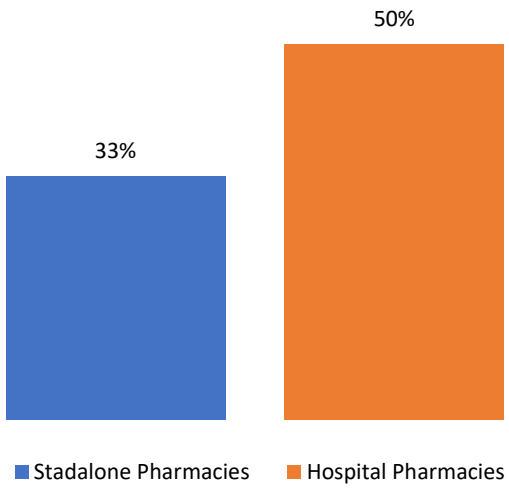


FIGURE 54: CHANGE IN QUALITY FOR DIGITAL THERMOMETER

This data underscores the healthcare industry's commitment to enhancing the quality of digital thermometer devices in the post-COVID landscape. 50% of hospital pharmacies witnessed a substantial increase in quality, whereas 33% of standalone pharmacies witnessed an improvement in quality. Hospital pharmacies, in particular, are instrumental in driving these quality improvements, reflecting the industry's dedication to ensuring high standards of product reliability and performance.

The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which enforces a cap on the trade margin for digital thermometers, highlights a notable shift in the quality standards associated with these devices. This regulatory measure underscores the importance of maintaining high-quality standards in digital thermometer production, potentially enhancing consumer trust and reliability in the market for such essential healthcare instruments.

This quality-focused value chain ensures that high-quality digital thermometers are produced, distributed, and made available to healthcare providers and patients. Standalone and hospital pharmacies, as end-users, emphasize quality to ensure that the medical devices meet the necessary standards for patient care.

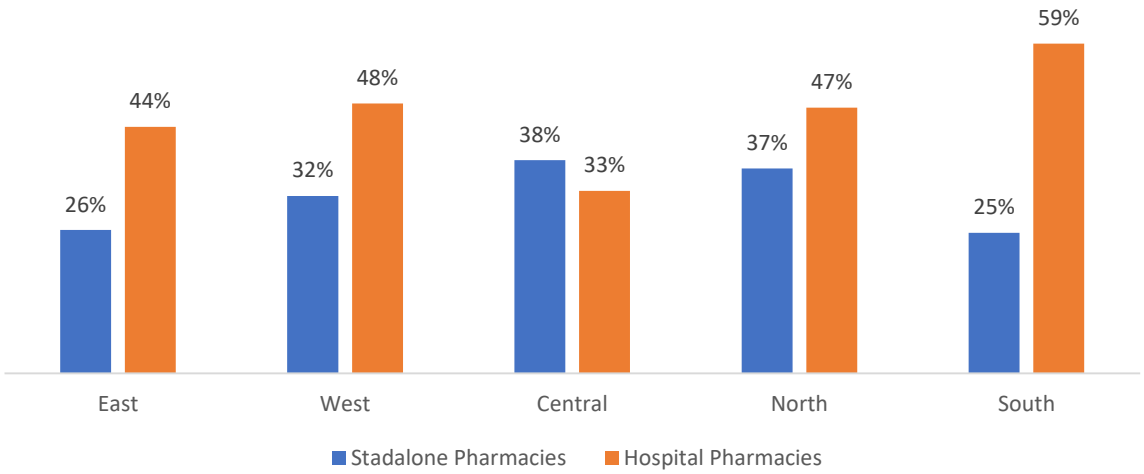


FIGURE 55: REGION WISE CHANGE IN QUALITY FOR DIGITAL THERMOMETER

In the Eastern region, there is a significant perceived improvement in quality across all stakeholders. 33% of standalone pharmacies and 50% of hospital pharmacies have shown improvement in quality. This indicates a concerted effort in the East to ensure that these essential medical devices meet higher standards of reliability and accuracy. The focus on quality reflects the region's commitment to providing reliable healthcare tools to its population.

Similar to the East, the Western region exhibits a dedication to improving the quality of digital thermometer devices, while 48% of standalone pharmacies have shown an improvement. 29% of hospital pharmacies have also shown improved quality. This demonstrates the region's commitment to ensuring that the digital thermometers meet stringent quality standards, benefiting both healthcare providers and patients.

Central India showcases a positive trend in quality enhancement. 43% and 45% of standalone pharmacies and hospital pharmacies, respectively, have shown a perceived improvement in quality. This reflects a concerted effort within the region to enhance the quality of digital thermometers, aligning with the healthcare industry's commitment to ensuring the reliability of these critical medical devices.

In the Northern region, there is a notable emphasis on quality improvement, with 55% of standalone pharmacies and 43% of hospital pharmacies voting for an improvement in quality. This collective focus underscores the region's commitment to delivering high-quality digital thermometers to healthcare providers and patients.

The Southern region also places a strong emphasis on quality enhancement. 50% of standalone pharmacies and 34% of hospital pharmacies have witnessed significant improvements in quality. This commitment to quality reflects the region's dedication to providing reliable and accurate digital thermometers to support healthcare delivery.

In summary, the data highlights a collective and region-wide effort to enhance the quality of digital thermometer devices post-TMR notification. Hospital pharmacies, in particular, show a strong commitment to quality improvement, but all stakeholders, including manufacturers and standalone pharmacies, play crucial roles in ensuring that these essential medical devices meet high standards of reliability and performance. This commitment underscores the healthcare industry's dedication to patient care and safety.

7.4 Oxygen Concentrator

The primary examination focused on Oxygen Concentrator, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.4.1 Change in Supply for Oxygen Concentrator

The provided data illustrates the changes in the supply of Oxygen Concentrator Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

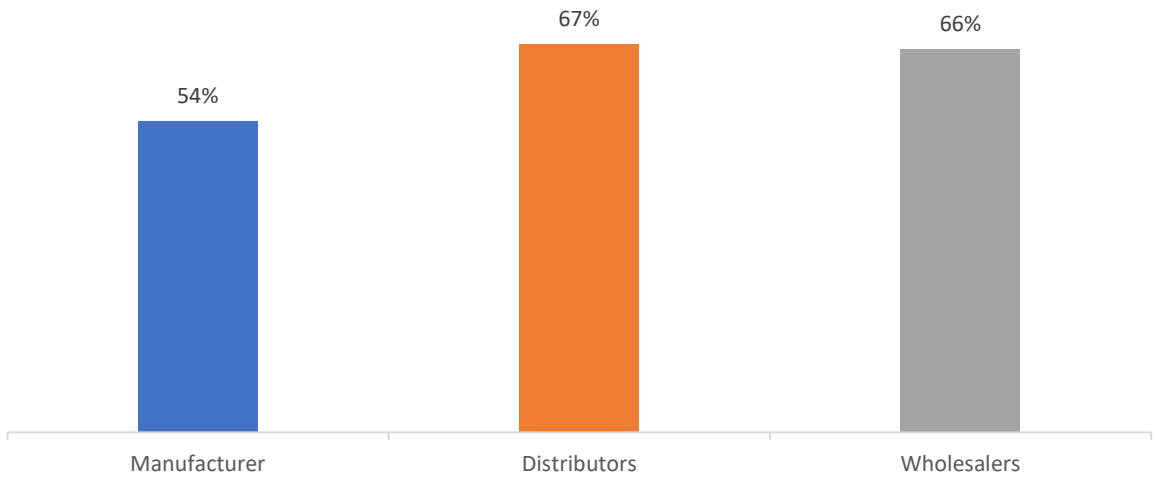


FIGURE 56: CHANGE IN SUPPLY FOR OXYGEN CONCENTRATOR

In the post-COVID scenario, distributors seem to play a significant role in the supply chain of oxygen concentrator devices across the country, perceived the highest percentage of supply among manufacturers, distributors, and wholesalers in all regions. Across all regions, 67% of distributors consistently witnessed the highest increase of supply. This suggests that distributors are crucial in ensuring that these life-saving medical devices reach end-users efficiently. The Trade Margin Rationalization (TMR) notification issued by NPPA in 2021, which imposes a cap on the trade margin for digital thermometers, signifies a substantial transformation in the availability of these devices. This regulatory action is expected to impact manufacturers and suppliers, potentially influencing the supply chain dynamics and accessibility of digital thermometers in the market.

The value chain for oxygen concentrators typically begins with manufacturers producing the devices. Distributors then play a crucial role in transporting these devices to various geographic regions, ensuring their availability to hospitals, pharmacies, and end-users. Wholesalers act as intermediaries between distributors and smaller retail outlets, contributing to the efficient distribution of these life-saving medical devices. During COVID, disruptions in this value chain led to variations in supply percentages among stakeholders and regions, affecting the accessibility of oxygen concentrators to those in need.

The data illustrates notable supply chain challenges for Oxygen concentrators Post-COVID-19 pandemic, including 42% respondents witnessing increase in lead times, 42% of respondents

witnessing difficulty in sourcing raw materials, 3% of respondents witnessing delays in shipping, and 13% of respondents witnessing disruptions in manufacturing for importers.

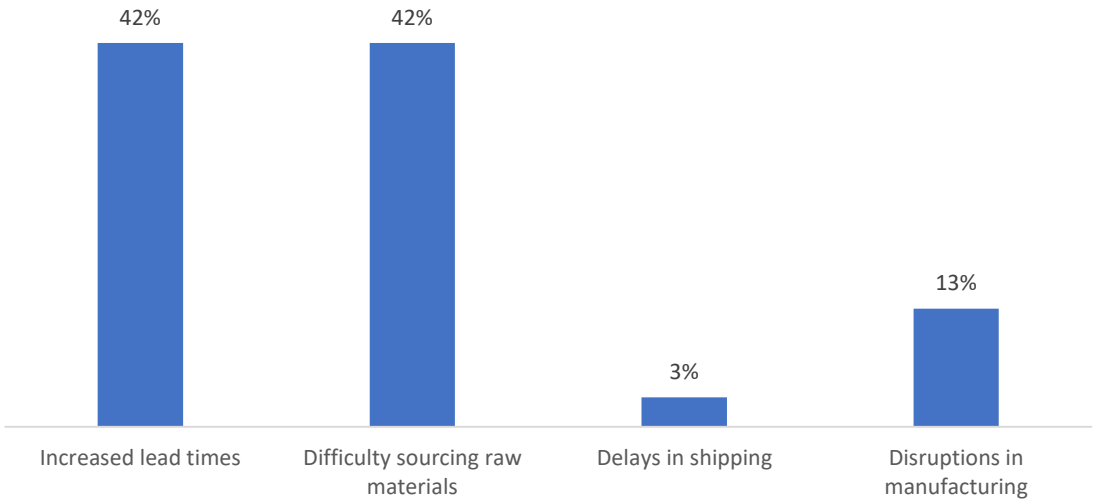


FIGURE 57: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

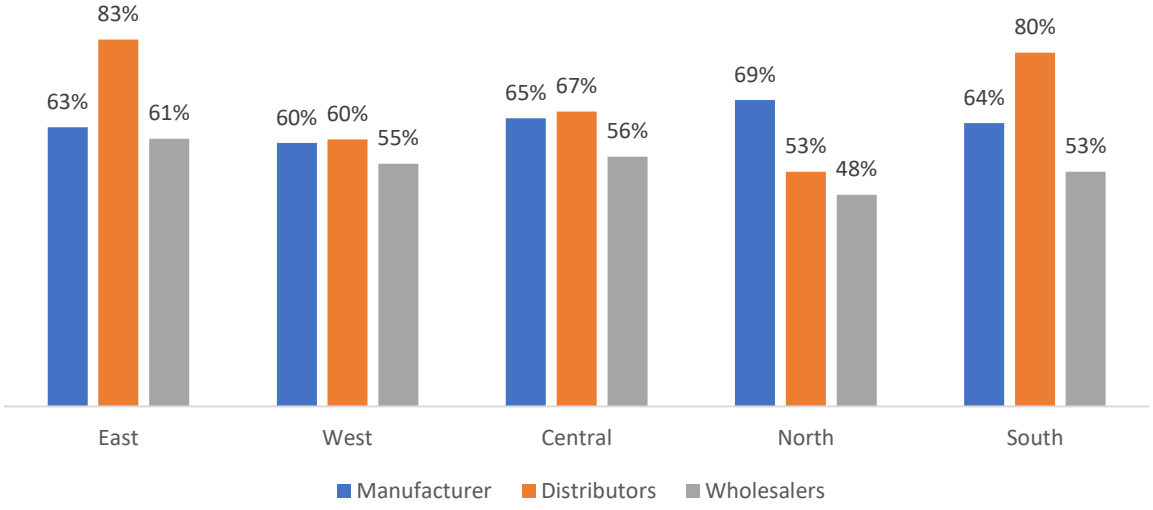


FIGURE 58: REGION WISE CHANGE IN SUPPLY FOR OXYGEN CONCENTRATOR

The data provided offers valuable insights into the impact of the Trade Margin Rationalization (TMR) notification in 2021 on the supply of oxygen concentrator medical devices across different regions. Overall, there has been a noticeable increase in supply post-notification, with an average of 54% of respondents acknowledging this improvement. This indicates that the TMR policy has had a positive effect on the availability of medical devices essential for patient care.

Region-wise analysis reveals variations in the response to the TMR notification. In the East, Central, and South regions, the majority of respondents witnessed an increase in supply, with percentages ranging from 60% to 69% of the respondents. This suggests that the TMR policy has been particularly effective in these areas, likely contributing to improved access to medical devices and healthcare services.

In the West 60% and North regions53% of respondents witnessed there is still a significant portion of respondents noting an increase in supply, the percentages are slightly lower compared to other regions. This indicates that while the TMR policy has had a positive impact, there may be additional factors influencing supply dynamics in these regions that warrant further investigation.

Furthermore, when considering the distribution channels, it is evident that wholesalers have seen the most significant increase in supply across all regions, followed closely by distributors. This highlights the importance of efficient distribution channels in ensuring the timely availability of medical devices to healthcare facilities and patients.

In conclusion, the data reflects a positive correlation between the TMR notification and the increase in supply of oxygen concentrator medical devices. The policy has effectively aligned with its objectives and goals of rationalizing trade margins, ultimately leading to enhanced accessibility to critical medical equipment. Moving forward, continued monitoring and evaluation of supply dynamics will be essential to ensure sustained improvements in healthcare infrastructure and patient care nationwide.

7.4.2 Change in Demand for Oxygen Concentrator

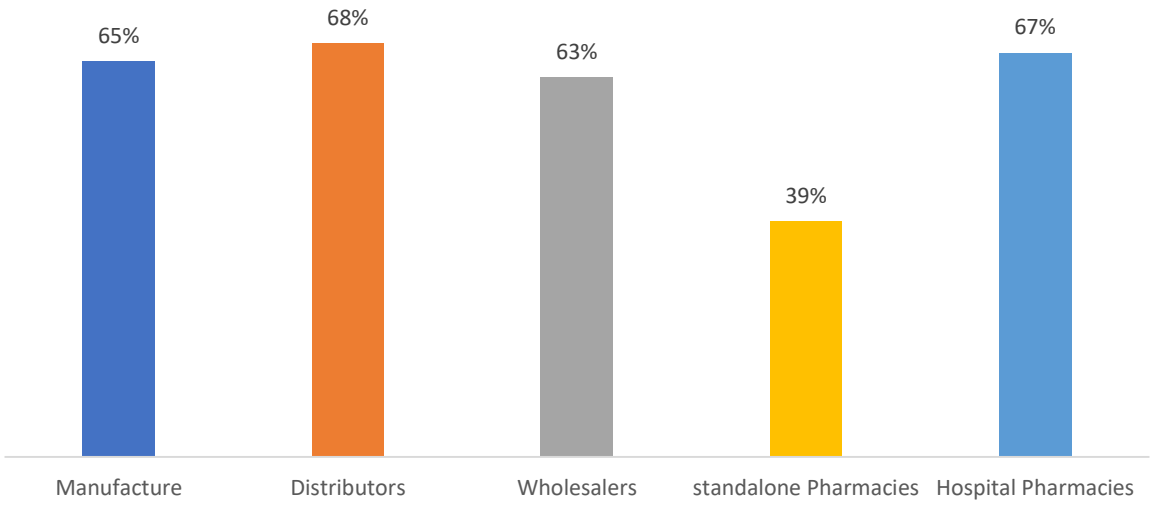


FIGURE 59: CHANGE IN DEMAND FOR OXYGEN CONCENTRATOR

The data on the increase in demand for oxygen concentrators post the Trade Margin Rationalization (TMR) notification in 2021 offers valuable insights into the market dynamics. It's notable that across all stakeholders, there has been a significant uptick in demand, witnessed with percentages ranging from 39% of respondents of standalone pharmacies to 68% respondents of distributors. This surge in demand reflects a heightened need for oxygen concentrators, likely driven by increased awareness and accessibility due to TMR. Manufacturers, distributors, wholesalers, and pharmacies, both standalone and hospital-based, have witnessed substantial rises in demand, indicating a broad impact of the policy change.

In conclusion, the Trade Margin Rationalization notification appears to have effectively stimulated demand for oxygen concentrators across various segments of the supply chain. The data suggests that the policy objectives and goals of TMR, aimed at enhancing affordability, accessibility, and availability of critical medical devices, particularly during healthcare emergencies like the COVID-19 pandemic, have been aligned. The notable increase in demand underscores the positive outcomes of the TMR notification, indicating its effectiveness in addressing market inefficiencies and ensuring better access to essential healthcare equipment.

Among the importers 53% of respondents perceived that the demand has increased post TMR notification, 13% of them witnessed decreased and 34% of them witnessed there is no change in demand.

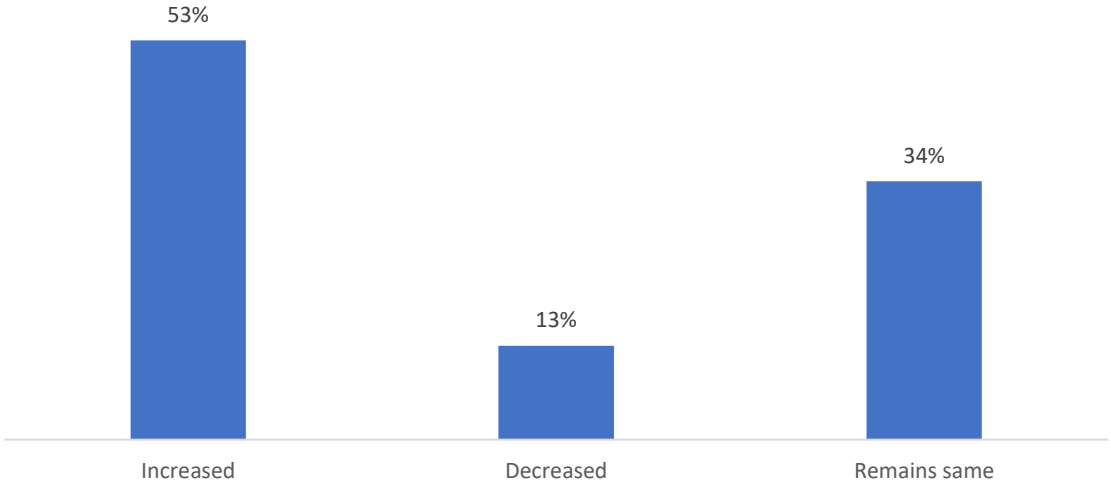


FIGURE 60: IMPORTERS – CHANGE IN DEMAND

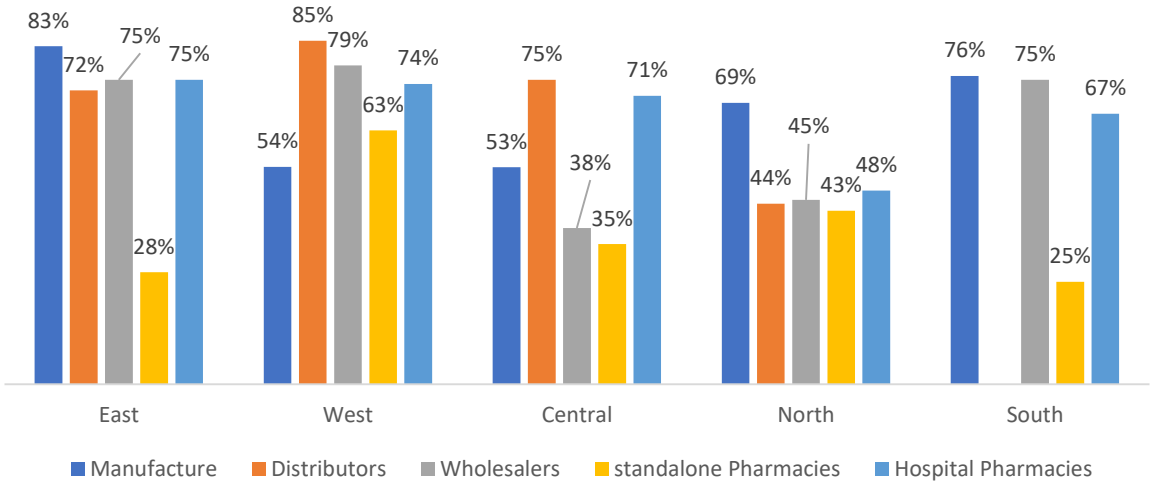


FIGURE 61: REGION WISE CHANGE IN DEMAND FOR OXYGEN CONCENTRATOR

The data provided offers valuable insights into the change in demand for oxygen concentrator medical devices following the Trade Margin Rationalization (TMR) notification in 2021. Overall, there has been a noticeable increase in demand post-notification, with 66% of respondents reporting this uptick. This indicates that the TMR policy has stimulated demand for oxygen concentrators, likely due to increased affordability and accessibility resulting from margin rationalization.

Region-wise analysis reveals interesting patterns in demand fluctuations. In the East 75% and South regions 83% of respondents witnessed an increase in demand. This suggests that the TMR policy has been particularly effective in these areas, potentially due to higher awareness and healthcare needs related to respiratory issues.

In the West, Central, and North regions, while there is still an increase in demand, the percentages vary for respondents. The 54% of respondents from West region shows a moderate increase in

demand, while the 53% of Central and 69% North region respondents witnessed slightly higher demand increases. These variations may be attributed to regional differences in healthcare infrastructure, economic conditions, and awareness about the benefits of oxygen concentrators.

Analysing demand by distribution channels provides additional insights. Standalone pharmacies and hospital pharmacies witness varied responses across regions, indicating diverse consumer behaviours and healthcare practices. Notably, the South region witnesses a significant increase in demand among 75% of standalone pharmacies and 67% hospital pharmacies respondents, highlighting the importance of these channels in meeting the rising demand for oxygen concentrators.

In conclusion, the data suggests that the TMR notification has successfully stimulated demand for oxygen concentrator medical devices, aligning with its objectives of enhancing affordability and accessibility. The increased demand reflects a growing recognition of the importance of respiratory healthcare and the role of oxygen concentrators in addressing respiratory ailments. Moving forward, continued monitoring of demand trends and targeted interventions to address regional disparities will be essential to maximize the positive impact of the TMR policy on healthcare outcomes and patient well-being.

7.4.3 Change in Sales for Oxygen Concentrator

The provided data illustrates the changes in the sales of Oxygen Concentrator Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, manufacturers & importers.

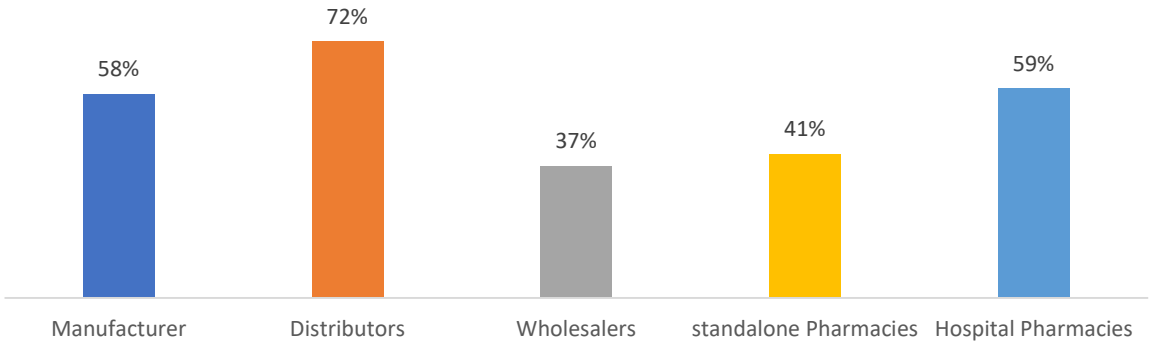


FIGURE 62: CHANGE IN SALES FOR OXYGEN CONCENTRATOR

The data regarding the increase in sales of oxygen concentrators post the Trade Margin Rationalization (TMR) notification in 2021 provides valuable insights into market dynamics among different stakeholders. Notably, 72% of distributors witnessed the most significant surge in sales, indicating a robust demand for oxygen concentrators in the distribution channels. 58% of Manufacturers also witnessed a substantial increase in sales, reflecting heightened consumer demand and improved accessibility due to TMR. However, 37% of wholesalers witnessed a comparatively lower increase in sales, suggesting potential challenges or variations in market dynamics specific to this segment.

In conclusion, the TMR notification appears to have positively impacted sales of oxygen concentrators by enhancing accessibility and affordability across the supply chain. The substantial increases in sales reported by manufacturers and distributors, as well as notable rises in standalone and hospital pharmacies, indicate alignment with the objectives and goals of TMR. By streamlining trade margins, the policy has facilitated a more efficient distribution of oxygen concentrators, ensuring better access to critical medical equipment for patients in need. The data underscores the effectiveness of TMR in

addressing market inefficiencies and improving the availability of essential healthcare devices, ultimately contributing to better healthcare outcomes for individuals and communities.

Post TMR notification, it indicates a significant increase in sales. About 63% of importers witnessed a surge in sales for oxygen concentrators, reflecting a heightened demand for respiratory support equipment post-notification. With only 9% of respondents indicates a decrease and 28% indicating no change, the data underscores a clear trend towards increased sales of oxygen concentrators among importers. This suggests a growing emphasis on respiratory health management and the importance of access to oxygen therapy, indicating a notable shift in healthcare priorities and consumer behaviour.

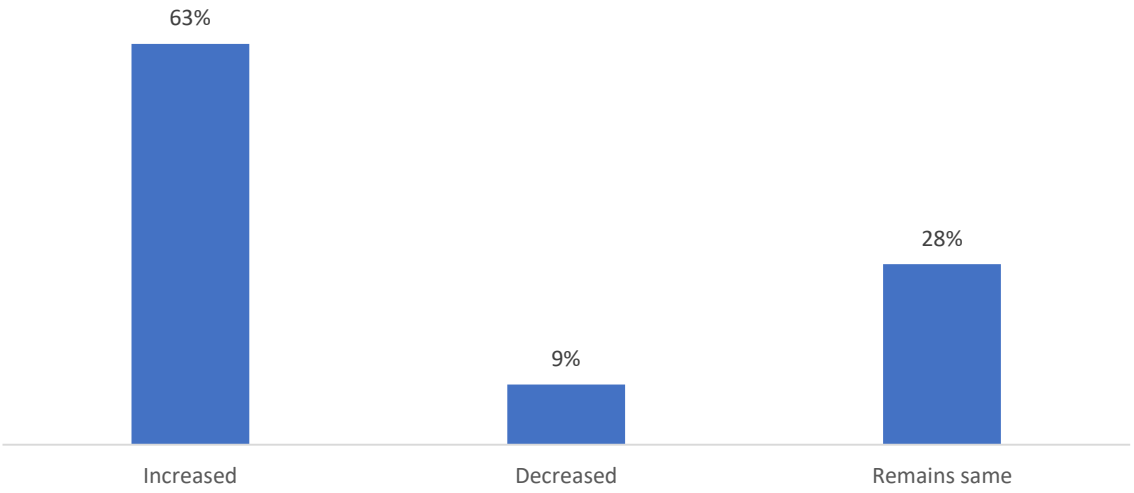


FIGURE 63: IMPORTERS – CHANGE IN SALES PERFORMANCE

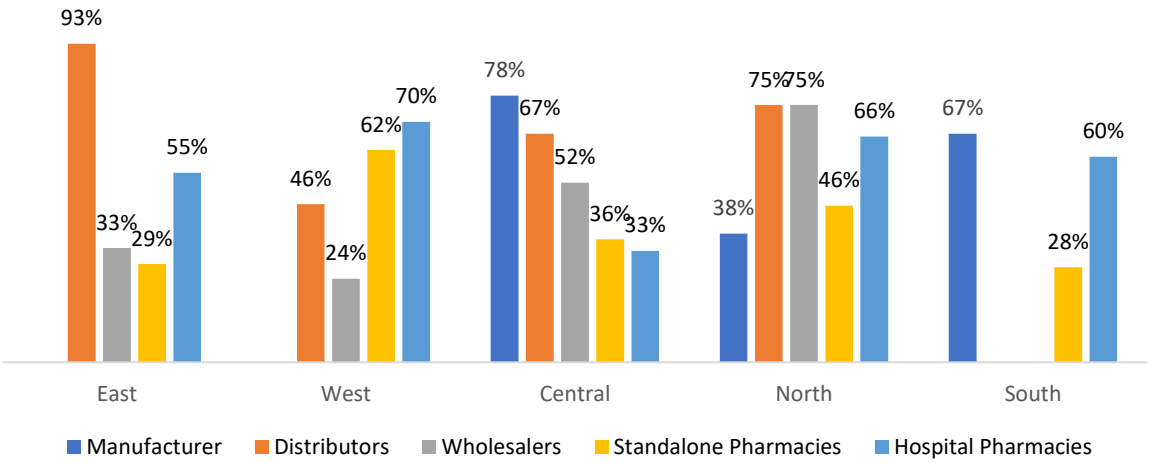


FIGURE 64: REGION WISE CHANGE IN SALES FOR OXYGEN CONCENTRATOR

The data provided illustrates the impact of Trade Margin Rationalization (TMR) on the sales of oxygen concentrators in different regions, as reported by various stakeholders. In terms of sales, the responses vary significantly across regions and types of stakeholders.

Starting with the Eastern region, while there's no specific percentage change mentioned, it's witnessed that the majority of distributors (93%) observed an increase in sales. This suggests that the TMR has

likely positively influenced the market dynamics, making the product more accessible or attractive to distributors in the East.

Moving to the Western region, although there's no overall change in sales reported, there's a substantial increase in sales witnessed by wholesalers (62%) and hospital pharmacies (70%). This could indicate a more significant impact of the TMR among certain segments within the region, potentially due to specific market conditions or distribution networks.

In the Central region, there's a striking 78% of respondents indicating increase in sales overall, with a significant proportion of stakeholders across all categories reporting growth. This suggests that the TMR has been highly effective in stimulating demand and improving accessibility to oxygen concentrators in the Central region.

In the North, the sales increase is witnessed across all stakeholder categories, with 38% of respondents overall. Particularly high increases are witnessed by distributors (75%) and wholesalers (75%). This indicates a strong positive response to the TMR, possibly due to improved pricing structures or market dynamics.

In the Southern region, there's a substantial increase in sales witnessed, especially among manufacturers (67%) and hospital pharmacies (60%). However, standalone pharmacies report no change, suggesting that the impact of the TMR may vary within the region depending on the distribution channels and market conditions.

In conclusion, the data suggests that the Trade Margin Rationalization (TMR) policy implemented in 2021 has had a generally positive effect on the sales of oxygen concentrators across different regions. The significant increases in sales reported by various stakeholders indicate that the TMR has effectively addressed issues related to pricing and distribution, making oxygen concentrators more accessible and affordable. Overall, the TMR seems to be aligned with its objectives and goals of improving market efficiency, affordability, and accessibility of essential medical devices like oxygen concentrators. It has facilitated a more equitable distribution of these devices, ensuring that they reach those in need more effectively, which is crucial, especially during times of healthcare crises like the COVID-19 pandemic.

7.4.4 Change in Price for Oxygen Concentrator

The provided data illustrates the changes in the price of Oxygen Concentrator Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

FIGURE 65: CHANGE IN PRICE FOR OXYGEN CONCENTRATOR

In the post-COVID scenario, distributors have witnessed a significant influence on the cost of oxygen concentrator devices, perceiving for the highest percentage of increase in cost among all stakeholders at 75%. This underscores their role in setting market cost for these critical medical devices.

72% of respondents from hospital pharmacies observed an increase in costs, highlighting a prevalent trend of margin pressure throughout the distribution chain. However, standalone pharmacy respondents witnessed a comparatively lower increase in prices compared to the perceptions of other stakeholders. Also 56% of wholesalers, 31% of standalone pharmacies respondents witnessed increase in costs post TMR notification. The Trade Margin Rationalization (TMR) notification issued by NPPA in 2021, which enforces a cap on the trade margin for oxygen concentrators, highlights a substantial alteration in the pricing of these crucial medical devices. This regulatory measure aims to ensure fair pricing practices and enhance affordability, potentially improving access to oxygen concentrators for patients in need.

In the value chain for oxygen concentrators, manufacturers set the initial price for the devices. Distributors play a pivotal role in determining the market prices based on factors such as demand, supply, competition, and operational costs. Wholesalers act as intermediaries, contributing to the pricing dynamics by adjusting their prices to align with market trends. Standalone pharmacies and hospital pharmacies purchase these devices at prevailing market prices and may pass on the costs to end-users. Factors contributing to price changes include changes in production costs, supply chain disruptions, and shifts in demand and supply dynamics.

Post-TMR notification, a significant decrease in cost, with 53% of importers witnessed a reduction. This cost decline likely contributes to increased demand and sales of oxygen concentrators, as lower costs improve accessibility for consumers needing respiratory support. With only 9% witnessed an increase in prices and 38% indicating no change, the data highlights the effectiveness of the NPPA notification in ceiling of prices in positively influencing affordability and accessibility in healthcare. This underscores a favourable outcome of the NPPA notification on TMR, aligning with its objective to enhance access to critical medical devices like oxygen concentrators.

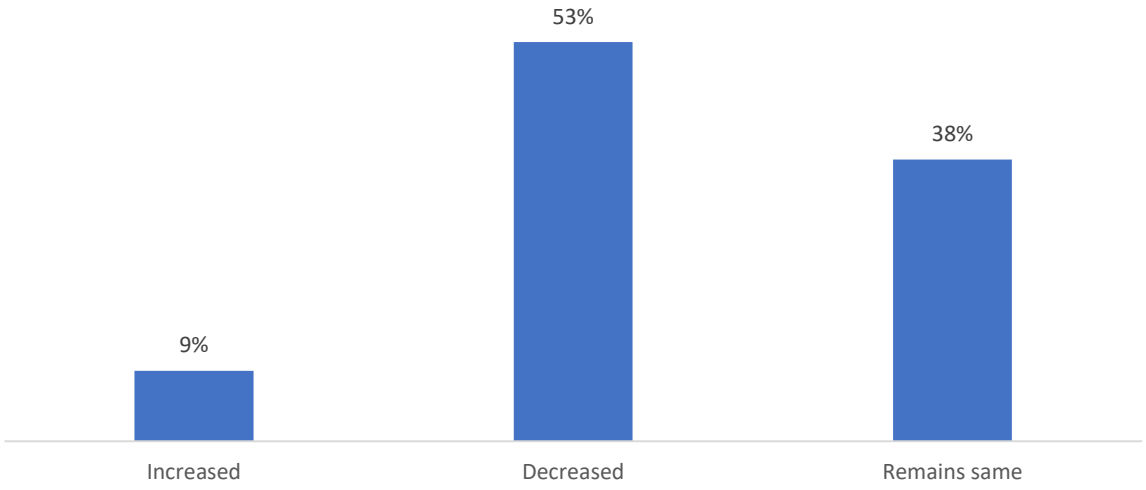


FIGURE 66: IMPORTERS – PRICING PERCEPTION

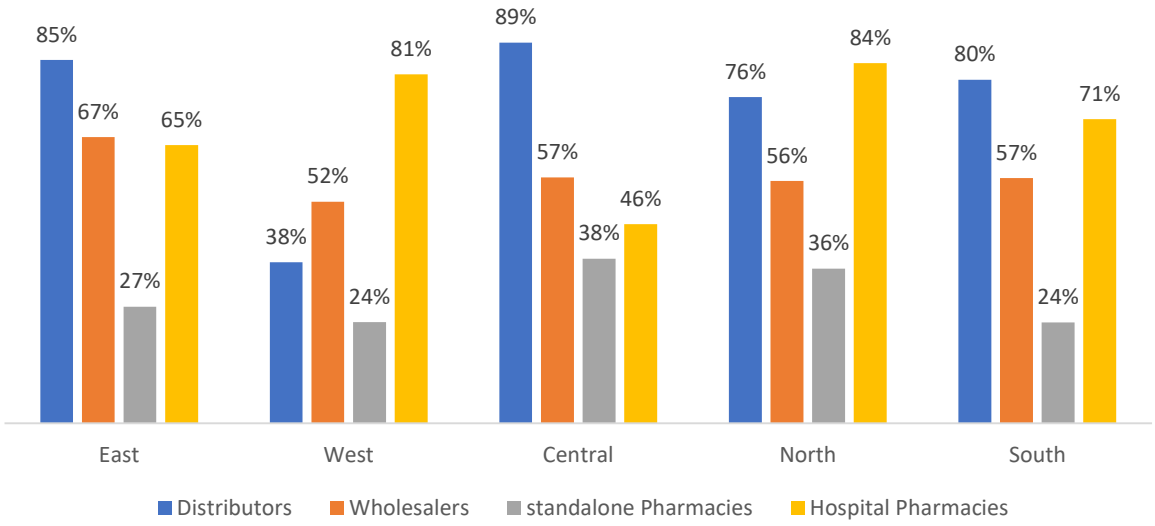


FIGURE 67:CHANGE IN PRICE FOR OXYGEN CONCENTRATOR

The provided data outlines the percentage of respondents who observed an increase in costs post-notification of Trade Margin Rationalization (TMR) on oxygen concentrators across different stakeholders and regions. Analysing the trends in increased costs offers insights into how the TMR policy has impacted the pricing dynamics of oxygen concentrators and the associated implications for stakeholders.

In the Eastern region, a significant proportion of respondents across all stakeholder categories reported an increase in costs, with 85% of distributors and 65% of hospital pharmacies witnessed the highest percentages. This suggests that despite the TMR policy aiming to rationalize trade margins, certain factors or market dynamics in the Eastern region might have led to cost escalations for oxygen concentrators.

In the Western region, while the percentages are comparatively lower than the East, a substantial number of respondents across all categories reported increased costs. 81% of Hospital pharmacies

witnessed the highest increase, indicating potential challenges in cost management despite the TMR policy.

Moving to the Central region, a high percentage of respondents across all stakeholder categories reported increased costs, with 89% of distributors leading the trend. This suggests that despite the TMR policy's objectives, there might be other factors at play in the Central region contributing to cost escalations for oxygen concentrators.

In the Northern region, a significant majority of respondents reported increased costs, with 84% of hospital pharmacies being the most affected. This indicates potential challenges in cost management post-TMR notification, despite efforts to rationalize trade margins.

In the Southern region, a substantial proportion of respondents across all stakeholder categories reported increased costs, with 715 of hospital pharmacies witnessed the highest percentage. This suggests that despite the TMR policy, there are challenges in cost containment for oxygen concentrators in the Southern region.

In conclusion, while the Trade Margin Rationalization (TMR) policy aims to rationalize trade margins and improve affordability and accessibility of medical devices like oxygen concentrators, the data suggests that there are challenges in containing costs across various regions and stakeholder categories. Despite the TMR notification, a significant number of respondents reported increased costs, indicating potential market complexities and external factors influencing pricing dynamics.

However, it's essential to recognize that the TMR policy is a step towards addressing pricing inefficiencies and enhancing transparency in the medical device market. By aligning trade margins with market realities and promoting fair pricing practices, the TMR policy can contribute to long-term improvements in affordability and accessibility of essential medical devices. Continued monitoring and adjustments may be necessary to ensure the policy's effectiveness and alignment with its objectives across different regions and stakeholder groups.

7.4.5 Change in Quality for Oxygen Concentrator

The provided data illustrates the changes in the quality of Oxygen Concentrator Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

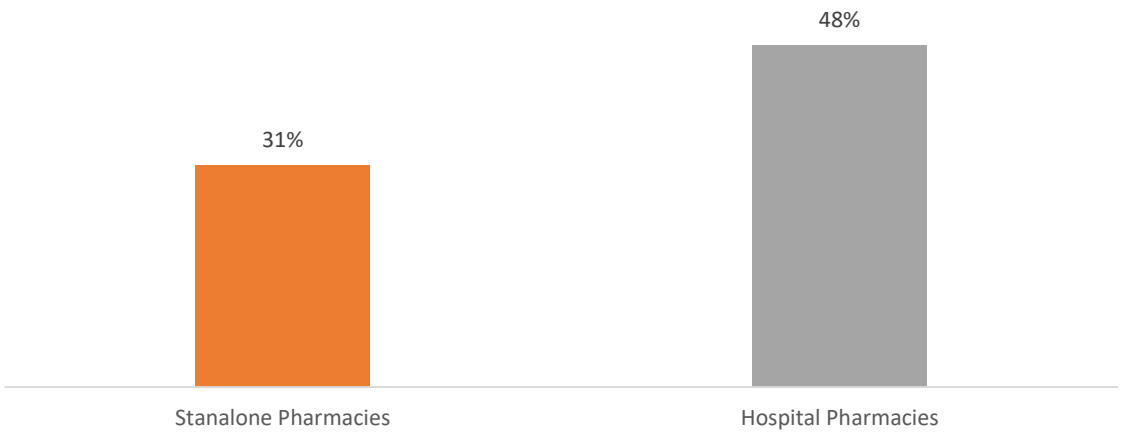


FIGURE 68: CHANGE IN QUALITY FOR OXYGEN CONCENTRATOR

In the post-COVID scenario, stakeholders, particularly hospital pharmacies, perceive an improvement in the quality of oxygen concentrator devices, with an overall increase in quality from 48% of respondents witnessed by the hospital pharmacy respondents. Distributors play a significant role in maintaining or enhancing quality. 31% of standalone pharmacy and 48% of hospital pharmacy respondents witnessed the increase in quality of the medical device post-TMR notification. The implementation of the Trade Margin Rationalization (TMR) notification by NPPA in 2021, which imposes a cap on the trade margin for oxygen concentrators, reflects a notable shift in the quality standards associated with these medical devices. This regulatory measure underscores the importance of maintaining high-quality standards in oxygen concentrator production, potentially enhancing patient safety and trust in the market for such critical healthcare equipment.

In the value chain for oxygen concentrators, manufacturers are responsible for the initial production and quality control of the devices. Distributors play a pivotal role in ensuring that these high-quality devices reach the market and end-users without compromising their quality. Hospital pharmacies and standalone pharmacies procure and stock these devices, offering them to healthcare professionals and patients. The perception of improved quality is crucial for maintaining trust and confidence in the entire supply chain, as it assures stakeholders that they are receiving safe and effective medical equipment.

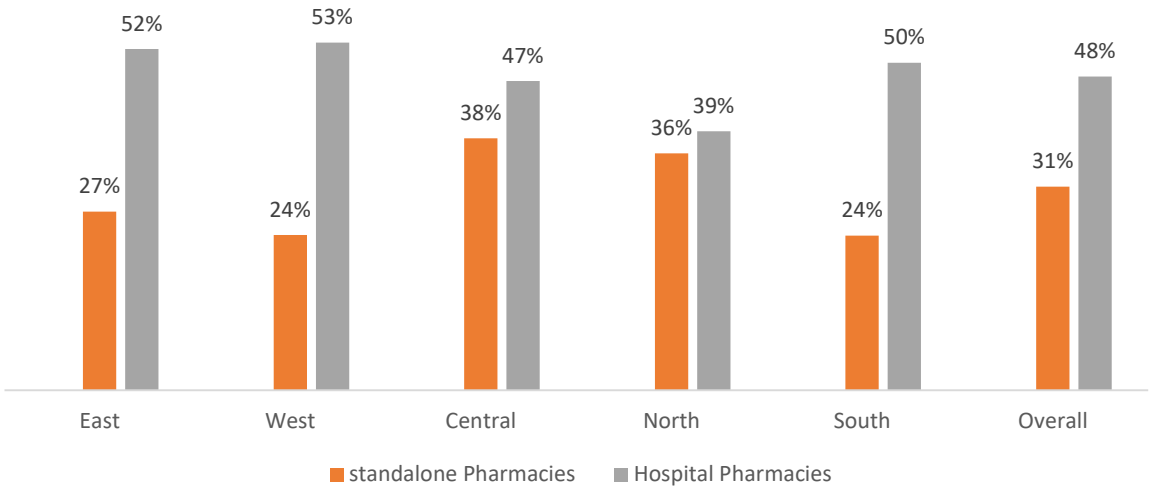


FIGURE 69: REGION WISE CHANGE IN QUALITY FOR OXYGEN CONCENTRATOR

Respondents from hospital pharmacies consistently witnessed the highest increase in quality across all regions, in the 52% of East, 53% of West, 47% of Central, 39% of North, and 50% South region respondents witnessed an increase in quality post TMR notification. This indicates that stakeholders involved in the distribution of these devices perceive improvements in quality post-TMR notification.

Standalone pharmacies also witnessed an increase in quality, but the change is relatively lower compared to hospital pharmacies. The 27% of East and 24% of South regions witnessed the highest increase in quality among standalone pharmacies.

The data reveals a general perception of improved quality in oxygen concentrator devices post-TMR notification, especially among hospital pharmacies. This improvement could be attributed to increased awareness and scrutiny of medical devices' quality during the pandemic, leading to stricter quality control measures by manufacturers and distributors. The enhanced focus on quality is likely a response to the heightened demand for reliable medical equipment during critical healthcare situations.

In conclusion, stakeholders, especially hospital pharmacies, perceive an improvement in the quality of oxygen concentrator devices post-TMR notification, highlighting the significance of maintaining high-quality standards in the healthcare supply chain. This perception of enhanced quality is likely a response to the increased scrutiny of medical equipment quality during the pandemic, underscoring the importance of quality control measures throughout the value chain. The findings suggest a positive impact of the TMR notification, aligning with its goal.

7.5 BP Monitor

The primary examination focused on BP Monitor, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.5.1 Change in Supply for BP Monitor

The provided data illustrates the changes in the supply of blood pressure monitors post-COVID, segmented into different regions and supply channels including wholesalers, distributors, manufacturers & importers.

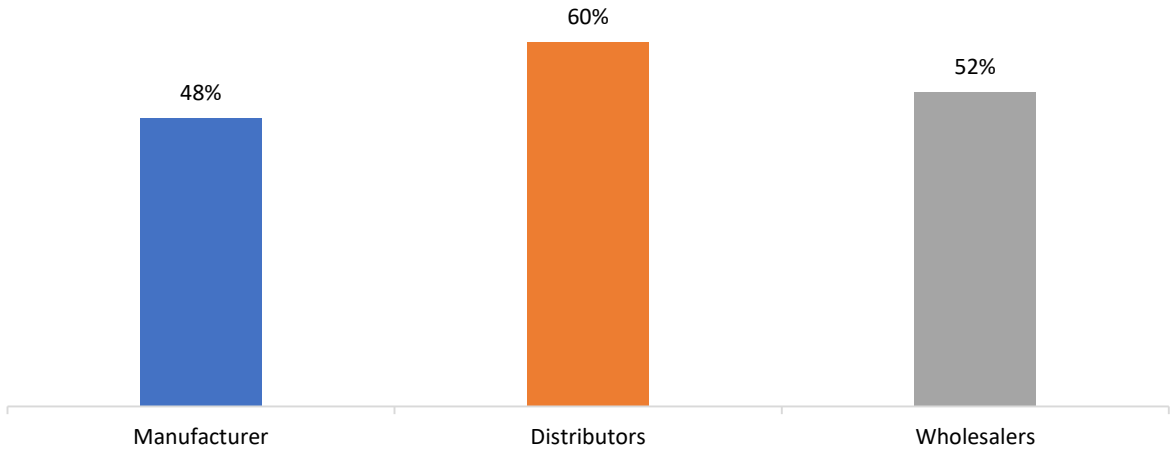


FIGURE 70: CHANGE IN SUPPLY FOR BP MONITOR

In the supply chain of blood pressure monitor devices, 60% distributors respondents witnessed a significant role, boasting supply of 60%. they are instrumental in ensuring the efficiency of distribution networks, which significantly contributes to the overall supply of BP monitors. acting as intermediaries in the supply chain, 52% wholesalers witnessed an increase in supply. their key function revolves around facilitating the stockpiling and distribution of BP monitors, manufacturers play a crucial role by contributing significantly to the overall 48% of respondents witnessed the increase in supply, their primary responsibility lies in the production of these devices, making them available in the market, and thereby serving as a pivotal link in the supply chain. further supporting the seamless flow of these essential medical devices to various healthcare facilities and end-users. The findings suggest a positive impact of the TMR notification, aligning with its goal to improve the affordability to the consumers.

Post-COVID-19 pandemic, 52% respondents of Importers witnessed increase in lead times, 30% of respondents witnessed difficulty in sourcing raw materials, 13% of respondents witnessed delays in shipping, and 6% of respondents witnessed disruptions in manufacturing for importers. These obstacles likely resulted in limited availability and elevated costs for Blood Pressure Monitors. Nevertheless, the Trade Margin Rationalization notification likely played a pivotal role in alleviating the impact by rationalizing trade margins and ensuring more consistent pricing structures for Blood Pressure Monitors. This regulatory intervention likely helped stabilize the market, ensuring continued access to Blood Pressure Monitors despite the supply chain disruptions caused by the pandemic.

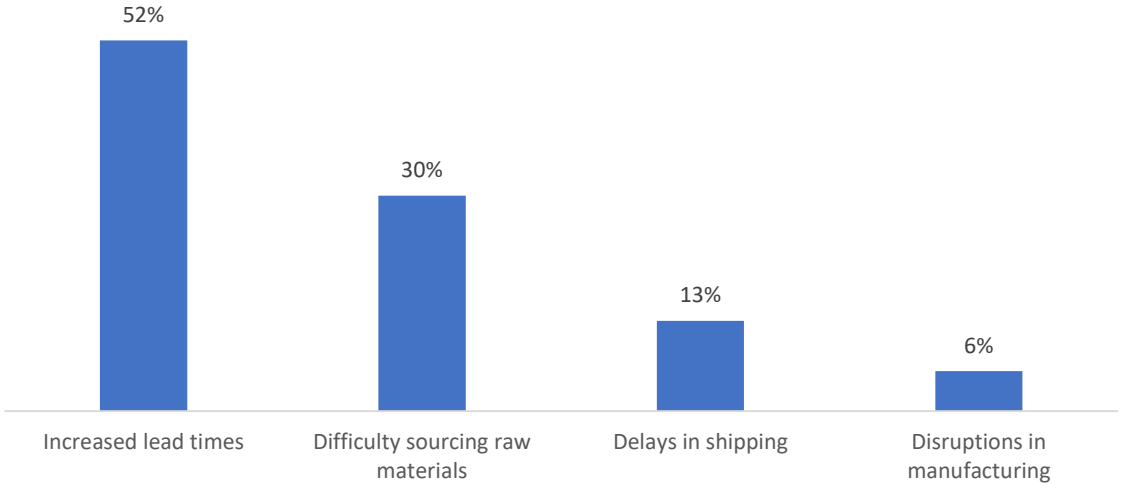


FIGURE 71: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

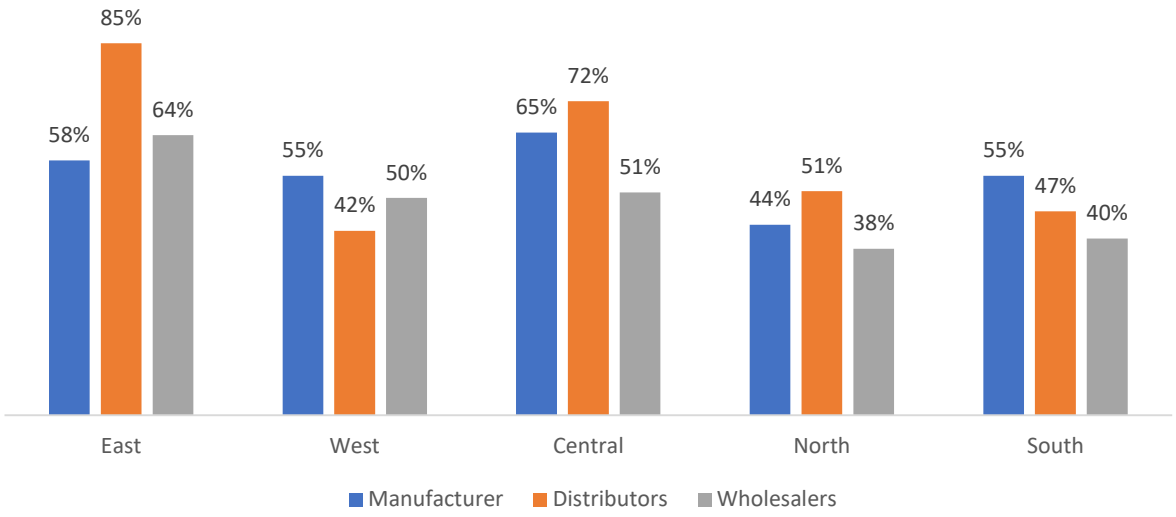


FIGURE 72: REGION WISE CHANGE IN SUPPLY FOR BP MONITOR

The impact of the Trade Margin Rationalization (TMR) notification in 2021 on the supply of blood pressure (BP) monitor medical devices has made a significant impact on supply. The overall picture indicates a positive response to the TMR policy, with 48% of respondents witnessed an increase in supply. This suggests that the TMR notification has played a role in enhancing the availability of BP monitors, an essential component of cardiovascular healthcare.

Region-wise analysis reveals interesting patterns. In the East, the majority of respondents (58%) witnessed an increase in supply, particularly among manufacturers and distributors. This suggests that the TMR policy has positively influenced the supply chain in this region, potentially contributing to better healthcare outcomes related to blood pressure management.

In the West, the data shows a more modest improvement in supply, with 55% of respondents acknowledging an increase. However, the percentages for distributors and wholesalers' respondents are notably lower at 42% and 50%, respectively. This indicates that while the TMR policy has had a positive impact, there may be challenges in the distribution channels that need attention.

Central and South regions demonstrate a stronger positive response to the TMR notification, with 65% and 55% of respondents, respectively, reporting an increase in supply. In both regions, distributors and

wholesalers play a significant role, suggesting effective implementation of the TMR policy across various stages of the supply chain.

In North region 44% of respondents shows a comparatively lower overall increase in supply, indicating potential challenges or limitations in the effectiveness of the TMR policy in this area. Further investigation into the specific factors influencing supply dynamics in the North would be beneficial to address any barriers to the policy's success.

In conclusion, the data provides evidence that the TMR notification has positively impacted the supply of BP monitor medical devices, aligning with its objectives of rationalizing trade margins. While there are variations across regions, the overall trend suggests a favourable outcome in terms of increased availability and accessibility of essential healthcare devices. Continued monitoring and targeted interventions in regions with lower improvements can further enhance the effectiveness of the TMR policy in promoting a robust and efficient supply chain for medical devices.

7.5.2 Change in Demand for BP Monitor

The provided data presents Increase in demand for BP monitors across different regions among wholesalers, distributors, Standalone Pharmacies, hospital Pharmacies, manufacturers & importers.

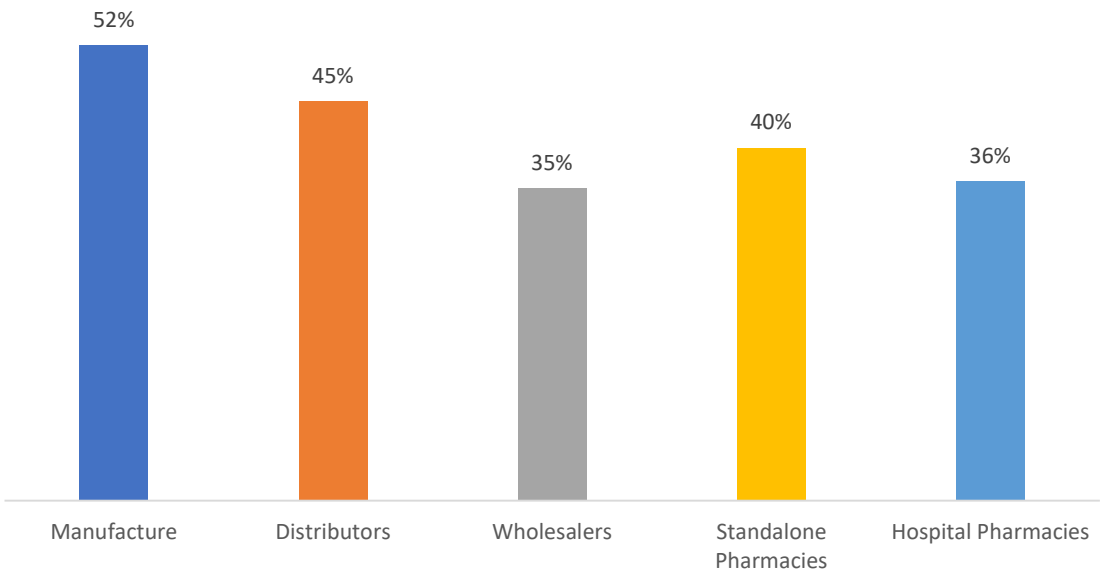


FIGURE 73: CHANGE IN DEMAND FOR BP MONITOR

The data on the increase in demand for BP monitors following the Trade Margin Rationalization (TMR) notification in 2021 provides valuable insights into market dynamics. Notably, while there has been an increase in demand across all stakeholder groups, the percentages vary significantly. 52% of Manufacturers witnessed a moderate rise, while 45%distributors and 35% wholesalers observed increases, respectively. 40% of Retailers and 36% of hospitals witnessed relatively lower increases at, suggesting varying levels of impact across different segments of the supply chain.

In conclusion, the TMR notification appears to have positively influenced demand for BP monitors, albeit with differing degrees of impact across stakeholders. While manufacturers, distributors, and retailers experienced notable increases, wholesalers and hospitals saw comparatively lower rises. Nevertheless, the overall trend indicates alignment with the objectives and goals of TMR, aimed at enhancing accessibility and affordability of essential medical devices. The data suggests that TMR has

contributed to a more equitable distribution of BP monitors, addressing market inefficiencies and ensuring better access to vital healthcare equipment.

The implementation of the TMR notification indicates a significant increase in demand for importers. Approximately 57% of importers witnessed a surge in demand for blood pressure monitors, suggesting a heightened focus on cardiovascular health monitoring post-notification. With only 14% witnessed a decrease and 29% indicating no change, the data reflects a clear trend towards heightened demand for blood pressure monitors among importers. This indicates a growing emphasis on preventive healthcare and the importance of monitoring blood pressure levels in the wake of the TMR notification.

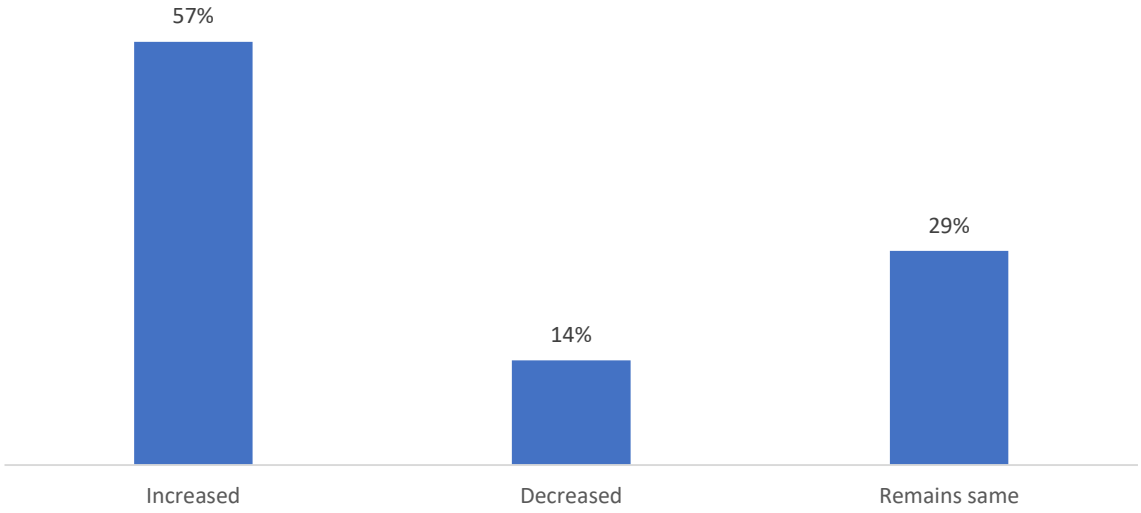


FIGURE 74: IMPORTERS – CHANGE IN DEMAND

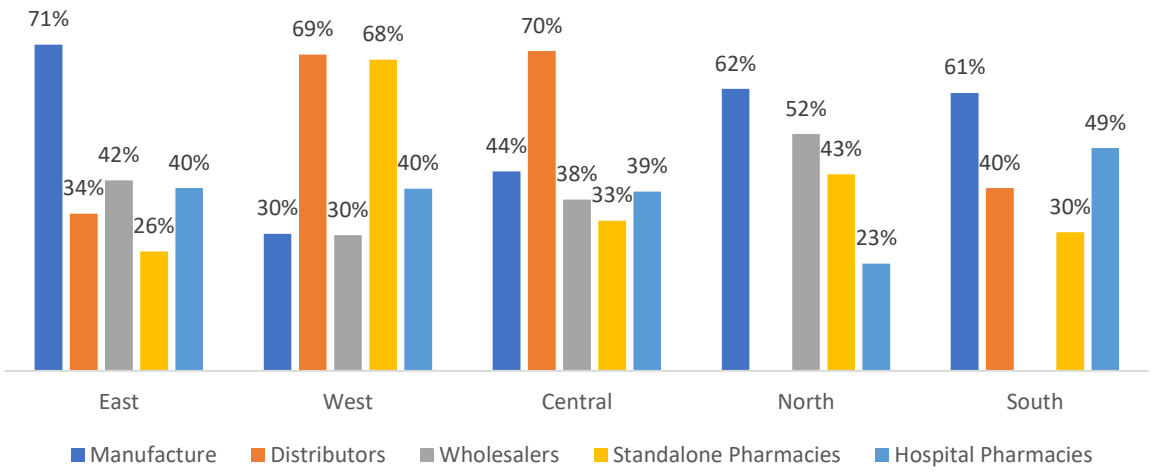


FIGURE 75: REGION WISE CHANGE IN DEMAND FOR BP MONITOR

The data provided reveals insights into the change in demand for blood pressure (BP) monitors following the Trade Margin Rationalization (TMR) notification in 2021. Overall, there has been a varied response to the TMR policy, with an average of 53% of respondents reporting an increase in demand. This suggests that while the TMR notification has had some impact on stimulating demand for BP monitors, there are notable differences across regions and stakeholders.

Region-wise analysis demonstrates diverse patterns in demand shifts. In the East and South regions, a majority of respondents reported an increase in demand, indicating a positive response to the TMR policy in these areas. The East region shows moderate increases across manufacturers, distributors, and retailers, suggesting a holistic adoption of BP monitors in healthcare practices. Conversely, the South region exhibits significant demand increases among manufacturers and hospitals, reflecting a growing recognition of the importance of BP monitoring in patient care.

In the West and Central regions, the response to the TMR notification is mixed. While there are notable increases in demand witnessed by distributors and retailers in the West, the Central region demonstrates varied responses across stakeholders. This suggests that factors beyond TMR, such as regional healthcare preferences and economic conditions, may influence the demand dynamics for BP monitors.

The North region, however, presents a contrasting scenario, with distributors perceived no increase in demand post-TMR notification. This indicates potential challenges or barriers to the adoption of BP monitors in this region, which may require targeted interventions to address.

Furthermore, analysing demand by distribution channels highlights the importance of retail outlets and hospitals in meeting the increased demand for BP monitors. Standalone retailers and hospitals witness notable demand increases across regions, underscoring their pivotal role in providing access to essential healthcare devices.

In conclusion, while the TMR notification has had varying degrees of success in stimulating demand for BP monitors, its overall impact aligns with the objectives of enhancing accessibility and affordability of medical devices. Continued monitoring and targeted interventions will be essential to address regional disparities and maximize the positive outcomes of the TMR policy. By fostering a conducive environment for the adoption of BP monitors, the TMR notification can contribute to improved healthcare outcomes and patient well-being across diverse healthcare.

7.5.3 Change in Sales for BP Monitor

The provided data presents changes in the sales of BP monitors across different regions for wholesalers, distributors, retailers, hospitals, manufacturers & importers.

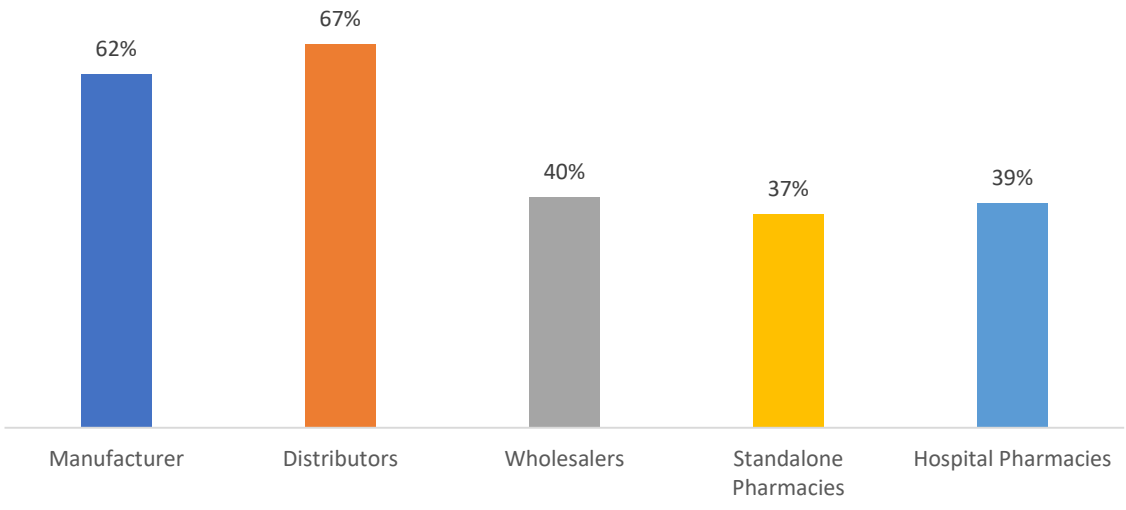


FIGURE 76: CHANGE IN SALES FOR BP MONITOR

The data highlighting the increase in sales of BP monitors post the Trade Margin Rationalization (TMR) notification in 2021 provides meaningful insights into the market dynamics among different stakeholders. Notably, both 62% of manufacturers and 67% of distributors witnessed substantial increases in sales, indicating a robust demand for BP monitors in the production and distribution channels. However, 37% of retailers and 40% of wholesalers witnessed comparatively lower increases suggesting potential challenges or variations in the retail and wholesale segments.

In conclusion, the TMR notification has evidently stimulated sales of BP monitors, aligning with its objectives and goals of enhancing accessibility and affordability of essential medical devices. The substantial increases reported by manufacturers and distributors, coupled with moderate rises in other segments, suggest an overall positive impact on the supply chain. By optimizing trade margins, TMR has facilitated a more efficient distribution of BP monitors, ensuring better access to crucial healthcare equipment. This data underscores the effectiveness of TMR in addressing market inefficiencies, promoting fair pricing, and ultimately contributing to improved healthcare outcomes for individuals and healthcare providers.

Post TMR notification, it indicates a significant increase in sales. About 63% of importers witnessed a surge in sales for oxygen concentrators, reflecting a heightened demand for respiratory support equipment post-notification. With only 9% of respondents indicates a decrease and 28% indicating no change, the data underscores a clear trend towards increased sales of oxygen concentrators among importers. This suggests a growing emphasis on respiratory health management and the importance of access to oxygen therapy, indicating a notable shift in healthcare priorities and consumer behaviour.

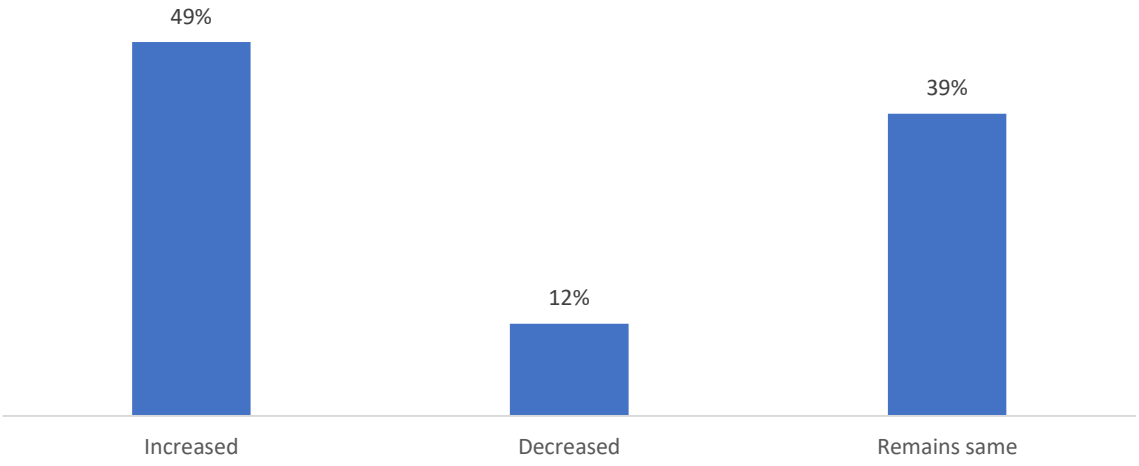


FIGURE 77: IMPORTERS – CHANGE IN SALES PERFORMANCE

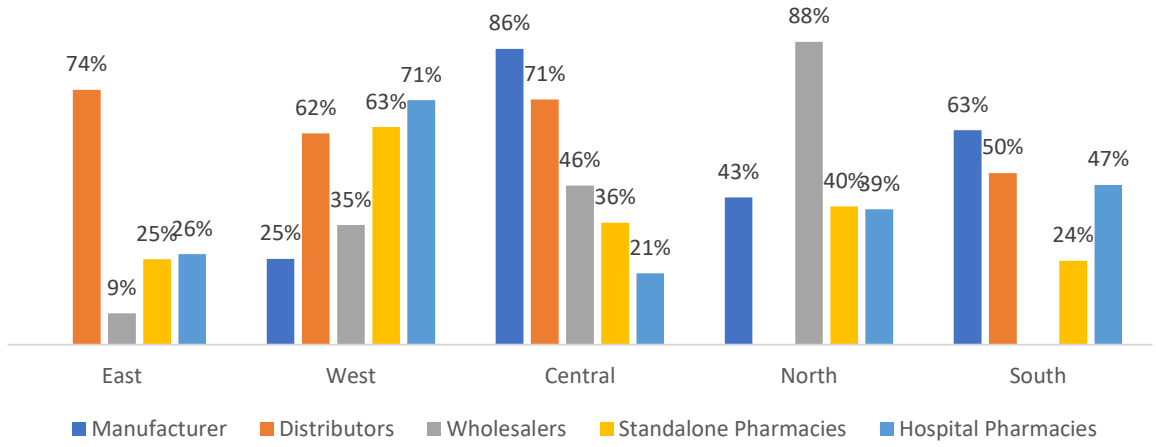


FIGURE 78: REGION WISE CHANGE IN SALES FOR BP MONITOR

The data provided presents the impact of Trade Margin Rationalization (TMR) on the sales of BP monitors in different regions, as reported by various stakeholders. Observing the changes in sales post-TMR notification offers insights into how the policy has affected market dynamics and accessibility of BP monitors across different regions and stakeholder groups.

Starting with the Eastern region, while the increase in sales for manufacturers is not significant sampling, 74% of distributors witnessed a significant increase. However, the increase among other stakeholders like wholesalers, retailers, and hospitals is relatively modest. This suggests that the TMR policy may have particularly incentivized distributors in the East to promote and distribute BP monitors.

In the Western region, there's a substantial increase in sales witnessed across the board, with 25% of manufacturers, 62% of distributors, 35% of wholesalers, 63% of retailers, and 71% of hospitals all showing notable increases. This indicates a widespread positive response to the TMR policy, indicating improved accessibility and affordability of BP monitors in the Western region.

Moving to the Central region, there's a remarkable increase in sales witnessed across all stakeholder categories, with 86% of manufacturers witnessed increase leading the trend. This suggests that the TMR policy has effectively stimulated demand and improved accessibility to BP monitors in the Central region, aligning with its objectives of making medical devices more accessible and affordable.

In the Northern region, 88% of wholesalers witnessed the highest increase in sales, followed by 43% of manufacturers and 40% of hospital pharmacies. However, distributors and retailers perceived no change or modest increases. This suggests that while the TMR policy has had a positive impact on certain segments of the market, it may not have been equally effective across all stakeholders in the North.

In the Southern region, 63% of manufacturers and 50% of distributors witnessed significant increases in sales, while retailers and hospitals also show notable improvements. However, wholesalers report no change in sales, indicating a varied response to the TMR policy among different stakeholder groups within the region.

In conclusion, the data indicates that the Trade Margin Rationalization (TMR) policy implemented in 2021 has generally had a positive impact on the sales of BP monitors across various regions. The significant increases in sales reported by manufacturers, distributors, wholesalers, retailers, and hospitals suggest that the TMR policy has effectively addressed pricing and distribution challenges, making BP monitors more accessible and affordable.

Overall, the TMR policy seems to be aligned with its objectives and goals of improving market efficiency, affordability, and accessibility of essential medical devices like BP monitors. By reducing trade margins and promoting fair pricing practices, the TMR policy has facilitated greater access to BP monitors, which is crucial for managing and preventing cardiovascular diseases. It has also encouraged active participation from stakeholders across the supply chain, ensuring that BP monitors reach those in need more effectively, ultimately contributing to better healthcare outcomes.

7.5.4 Change in Price for BP Monitor

The provided data illustrates changes in the prices of BP monitors across different regions for wholesalers, distributors, standalone pharmacies, hospital pharmacies & importers.

FIGURE 79: CHANGE IN PRICE FOR BP MONITOR

The data reveals variations in increase in cost among stakeholders. 81% of Distributors have witnessed an Increase in costs, highlighting the significant fluctuations in the pricing dynamics they have encountered. 52% of Wholesalers follow closely with an increase in costs, while 42% of standalone pharmacies and 47% hospital pharmacies exhibit costs increases. These variations underscore the need for stakeholders to adjust their pricing strategies and operations to align with shifting market dynamics, ensuring the continued affordability and accessibility of BP Monitor devices for healthcare providers and patients.

In the BP Monitor device supply chain, a collaborative effort among various stakeholders ensures the efficient flow of products from production to end-users. The value chain initiates with manufacturers responsible for manufacturing BP Monitors. Manufacturers then distribute these products to distributors, acting as intermediaries for further distribution, Wholesalers play a crucial role in the chain by stockpiling BP Monitors and facilitating distribution to different healthcare facilities, including standalone pharmacies and hospital pharmacies. These pharmacies, essential links in the chain, serve as procurement points for healthcare professionals and institutions, enabling them to access BP Monitors for patient care and diagnosis.

Since the implementation of the TMR notification reveals a significant decrease in costs, with 55% of importers witnessed a reduction. This cost reduction likely contributes to increased demand and sales of blood pressure monitors, as lower costs make these vital medical devices more accessible to consumers. With only 10% of respondents indicating an increase in prices and 35% of respondents indicating no change, the data underscores the effectiveness of the TMR notification in positively impacting affordability and accessibility in healthcare. This reflects a positive outcome of the TMR notification, aligning with its objective to improve access to essential medical devices like blood pressure monitors.

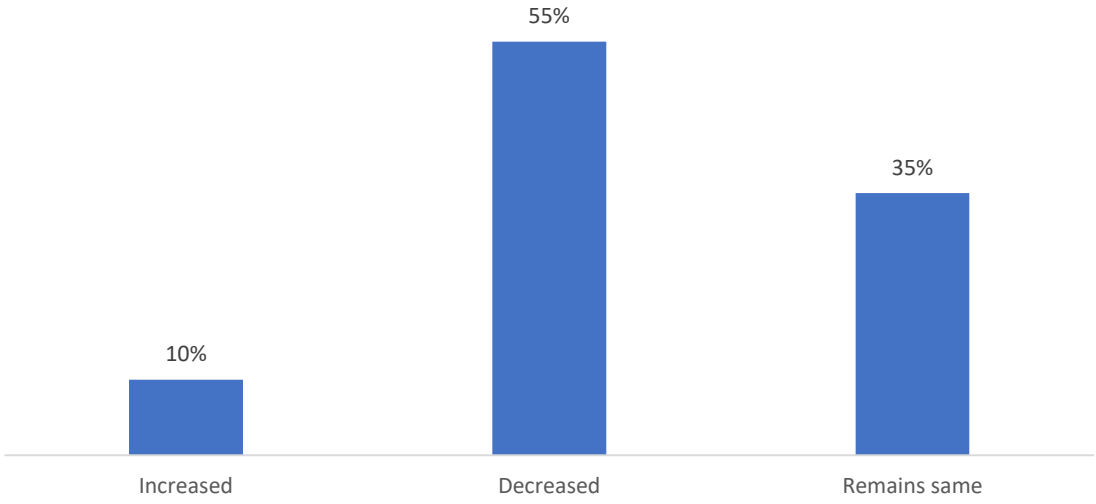


FIGURE 80: IMPORTERS – PRICING PERCEPTION

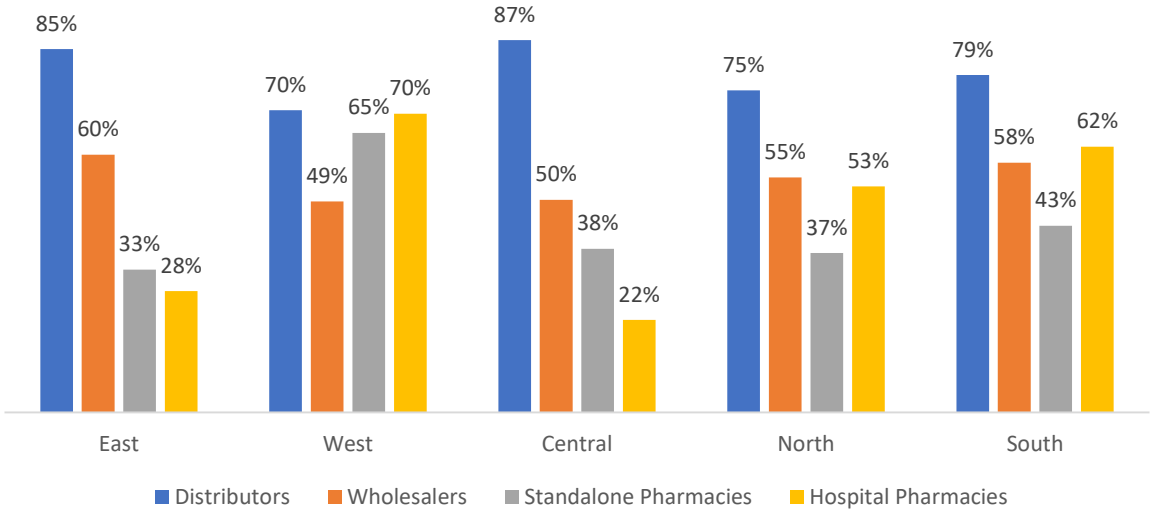


FIGURE 81: REGION WISE CHANGE IN PRICE FOR BP MONITOR

The data provided highlights the percentage of respondents who observed an increase in costs post-notification of Trade Margin Rationalization (TMR) on BP monitors across different stakeholders and regions. Analysing the trends in increased costs provides insights into how the TMR policy has influenced pricing dynamics and the associated implications for stakeholders.

In the Eastern region, a significant majority of respondents across all stakeholder categories witnessed increased costs, with 85% of distributors perceived the highest percentage. This indicates potential challenges in cost management despite the TMR policy's objectives to rationalize trade margins and improve affordability.

In the Western region, a substantial number of respondents across all categories reported increased costs, with 70% of hospital pharmacies being the most affected. This suggests that despite efforts to rationalize trade margins, there are challenges in containing costs for BP monitors in the Western region.

Moving to the Central region, a high percentage of respondents across all stakeholder categories witnessed increased costs, with 87% of distributors perceived the highest increase. This indicates potential difficulties in cost containment post-TMR notification, despite the policy's intent to improve market efficiency and affordability.

In the Northern region, a significant majority of respondents witnessed increased costs, with 75% of distributors and 53% of hospital pharmacies witnessed notable increases. This suggests ongoing challenges in cost management despite the TMR policy's objectives to enhance transparency and fairness in pricing.

In the Southern region, a substantial proportion of respondents across all stakeholder categories reported increased costs, with 62% of hospital pharmacies witnessed the highest percentage. This underscores the challenges in containing costs for BP monitors post-TMR notification, despite efforts to rationalize trade margins.

In conclusion, while the Trade Margin Rationalization (TMR) policy aims to rationalize trade margins and improve affordability and accessibility of medical devices like BP monitors, the data suggests ongoing challenges in containing costs across various regions and stakeholder categories. Despite the TMR notification, a significant number of respondents reported increased costs, indicating potential market complexities and external factors influencing pricing dynamics.

However, it's essential to recognize that the TMR policy represents a significant step towards addressing pricing inefficiencies and enhancing transparency in the medical device market. By aligning trade margins with market realities and promoting fair pricing practices, the TMR policy can contribute to long-term improvements in affordability and accessibility of essential medical devices. Continued monitoring and adjustments may be necessary to ensure the policy's effectiveness and alignment with its objectives across different regions and stakeholder groups.

7.5.5 Change in Quality for BP Monitor

The provided data illustrates changes in the quality of BP monitors across different regions for wholesalers, distributors, standalone pharmacies, and hospital pharmacies.

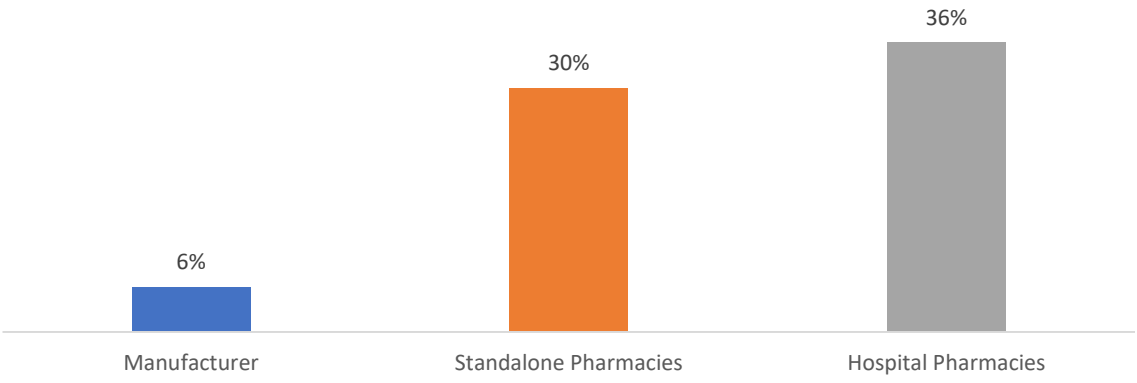


FIGURE 82: CHANGE IN QUALITY FOR BP MONITOR

The data reflects variations in perceived quality improvements among stakeholders. 6% of Manufacturers witnessed an increase in quality, indicating relatively stable product quality. In contrast, 30% of standalone pharmacies have witnessed increase in quality, while 36% of hospital pharmacies witnessed increase in quality, suggesting some shifts in the perceived quality of BP Monitors at these procurement points. These variations highlight the importance of monitoring and ensuring consistent

quality standards in the production and distribution of BP Monitor devices to meet healthcare needs effectively.

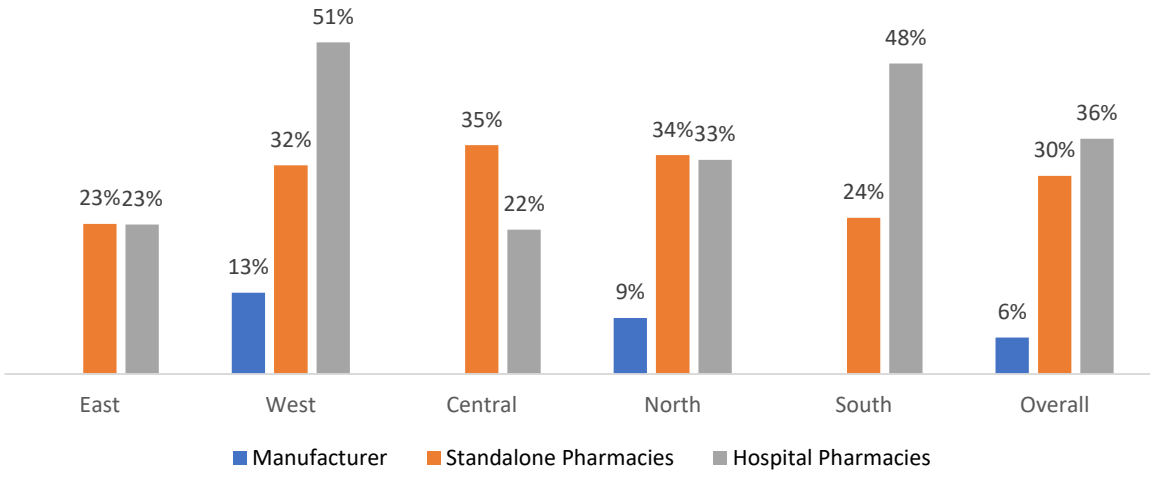


FIGURE 83: REGION WISE CHANGE IN QUALITY FOR BP MONITOR

The region-wise analysis of quality improvements in BP Monitor devices post-TMR notification exhibits trends and variations. In the 13% of Western region respondents of manufactures witnessed an increase in quality, indicating a relatively higher satisfaction level among users in terms of improved device quality. This suggests that manufacturers in the Western region might have undertaken quality enhancements, aligning with evolving market expectations.

Moving to the Northern region 9% of manufacturer respondents witnessed an increase in quality post TMR notification. This shift suggests that users in the Northern region have also experienced an improvement in the quality of BP Monitors. It is likely that manufacturers in this region have implemented measures to enhance the quality of their products, resulting in a more favourable perception among consumers.

In contrast, the Eastern region witnessed no change in quality for manufacturers but a significant increase in quality for both 23% of standalone pharmacies and 23% of hospital pharmacy respondents. This discrepancy suggests that pharmacies in the Eastern region, which serve as procurement points for these devices, have perceived notable quality improvements in the BP Monitors they receive. This may indicate that pharmacies are more discerning regarding quality changes in the devices they source.

The Southern region, akin to the Eastern region, shows no change in perceived quality for manufacturers but registers a substantial 48% increase in quality for hospital pharmacies. This remarkable increase underscores the significance of perceived quality improvements at healthcare institutions, possibly driven by advancements in the devices' performance and reliability.

In summary, the regional analysis reflects varying perceptions of BP Monitor device quality post-TMR. While the Western and Northern regions showcase positive quality changes, the Eastern and Southern regions highlight quality improvements perceived by pharmacies. These regional variations underscore the dynamic nature of the medical device market, where perceived quality changes can be influenced by factors such as manufacturing practices, user feedback, and evolving customer expectations. Understanding these regional nuances is essential for manufacturers and pharmacies to continue delivering high-quality BP Monitors that cater to the specific needs and preferences of different regions.

7.6 Nebulizer

The primary examination focused on Nebulizer, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.6.1 Change in Supply for Nebulizer

The provided data represents the supply percentages of Nebulizer devices across various geographic regions of the country, involving different stakeholders such as manufacturers, distributors, and wholesalers, during the post-COVID period.

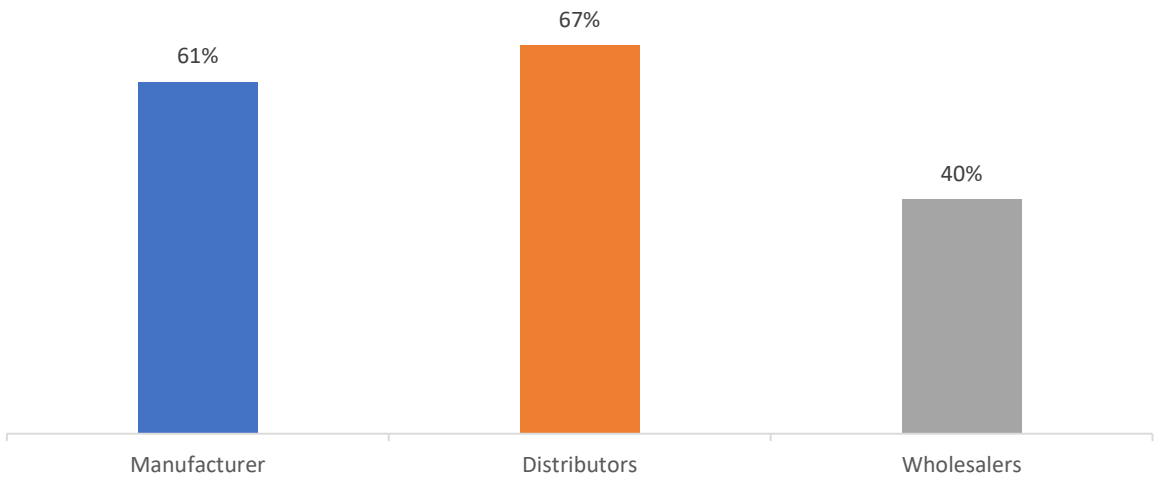


FIGURE 84: CHANGE IN SUPPLY FOR NEBULIZER

Looking at the overall percentages, it is evident that 67% distributors respondents witnessed the highest increase in supply, followed by 61% of manufacturers, and 40% of wholesalers. This suggests that distributors play a significant role in the supply chain for Nebulizers, possibly due to their efficient distribution networks and close proximity to end-users. The Trade Margin Rationalization (TMR) notification implemented by NPPA in 2021, which imposes a cap on the trade margin for nebulizers, indicates a substantial transformation in the availability of these medical devices. This regulatory measure is anticipated to affect manufacturers and suppliers, potentially influencing the supply chain dynamics and accessibility of nebulizers in the market, ensuring improved availability for consumers in need of respiratory care.

The variations among regions could be attributed to factors like local production capacity, demand dynamics, and distribution infrastructure. Manufacturers might be concentrating their production facilities in regions with better infrastructure or lower production costs, leading to varying supply percentages.

Post-COVID-19 pandemic, the importers with a 48% of respondents witnessed increase in lead times, 33% of respondents witnessed difficulty in sourcing raw materials, 13% of respondents witnessed delays in shipping, and 7% of respondents witnessed disruptions in manufacturing for importers. These difficulties likely led to constrained availability and increased costs for Nebulizers. However, the Trade Margin Rationalization notification likely played a crucial role in mitigating the impact by rationalizing

trade margins and ensuring more stable pricing structures for Nebulizers. This regulatory intervention likely helped stabilize the market, ensuring continued access to Nebulizers despite the supply chain disruptions caused by the pandemic.

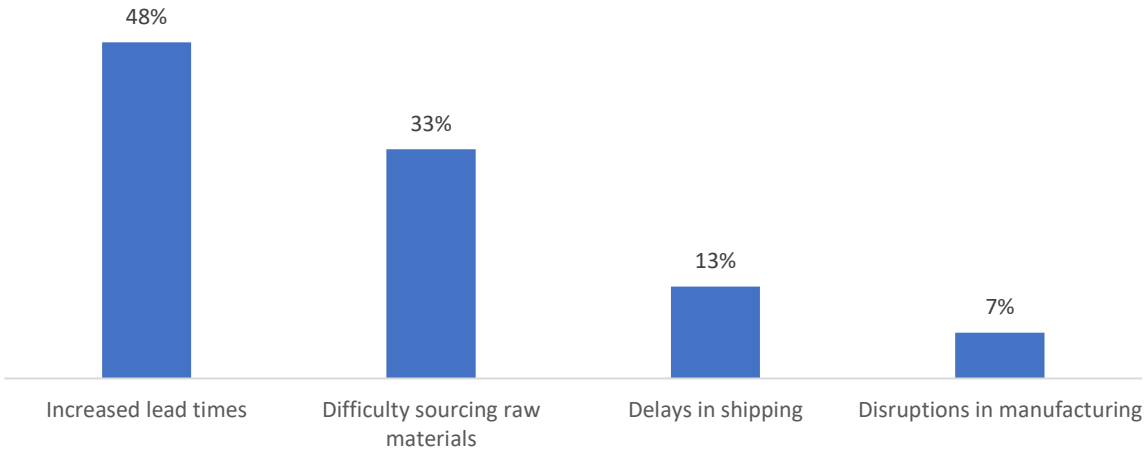


FIGURE 85: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

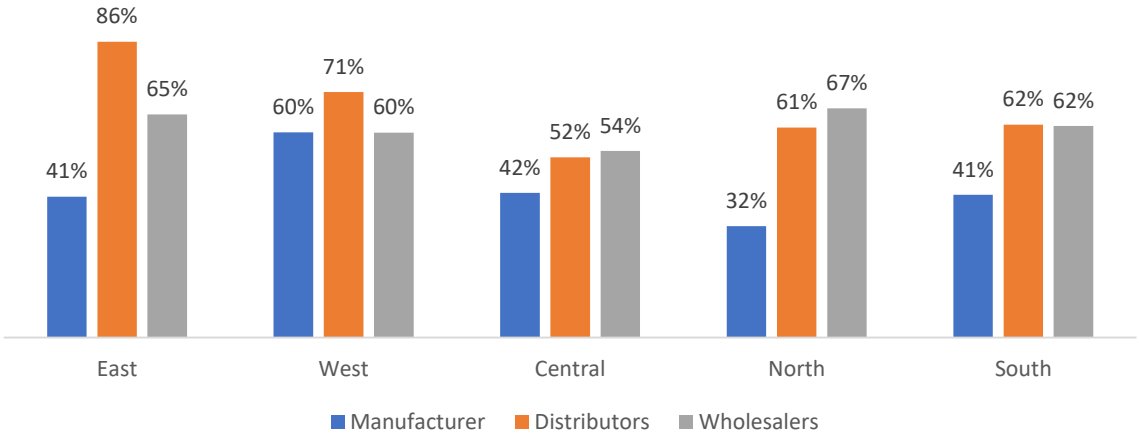


FIGURE 86: REGION WISE CHANGE IN SUPPLY FOR NEBULIZER

The data provided offers insights into the impact of the Trade Margin Rationalization (TMR) notification in 2021 on the supply of nebulizer medical devices. Overall, there has been a significant increase in supply post-notification, with 61% of respondents acknowledging this improvement. This indicates that the TMR policy has been effective in enhancing the availability of nebulizers, which are crucial for respiratory care and management.

Region-wise analysis reveals variations in the response to the TMR notification. In the East and South regions, a substantial majority of respondents reported an increase in supply, with percentages of respondents ranging from 41% to 65%. This suggests that the TMR policy has been particularly successful in these areas, likely contributing to improved access to nebulizers for patients requiring respiratory support.

In the West, Central, and North regions, while there is still a noticeable increase in supply, the percentages vary for respondents. The West region shows a robust response with 60% of respondents

witnessing an increase in supply, followed by the Central region with 42%. The North region, however, exhibits the lowest increase at 32%, indicating potential challenges in the implementation or effectiveness of the TMR policy in this area.

When considering the distribution channels, it is noteworthy that wholesalers have seen the most significant increase in supply across all regions, followed closely by distributors. This emphasizes the importance of efficient distribution networks in ensuring the timely availability of nebulizers to healthcare facilities and patients, especially during times of heightened demand.

In conclusion, the data suggests that the TMR notification has positively impacted the supply of nebulizer medical devices, aligning with its objectives of rationalizing trade margins. The increased availability of nebulizers post-notification signifies progress towards ensuring access to essential medical equipment for respiratory health. Moving forward, continued efforts to monitor and optimize supply chains will be essential to sustain and build upon the positive outcomes of the TMR policy in enhancing healthcare delivery and patient outcomes.

7.6.2 Change in Demand for Nebulizer

The provided data illustrates the changes in the supply of Nebulizer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers

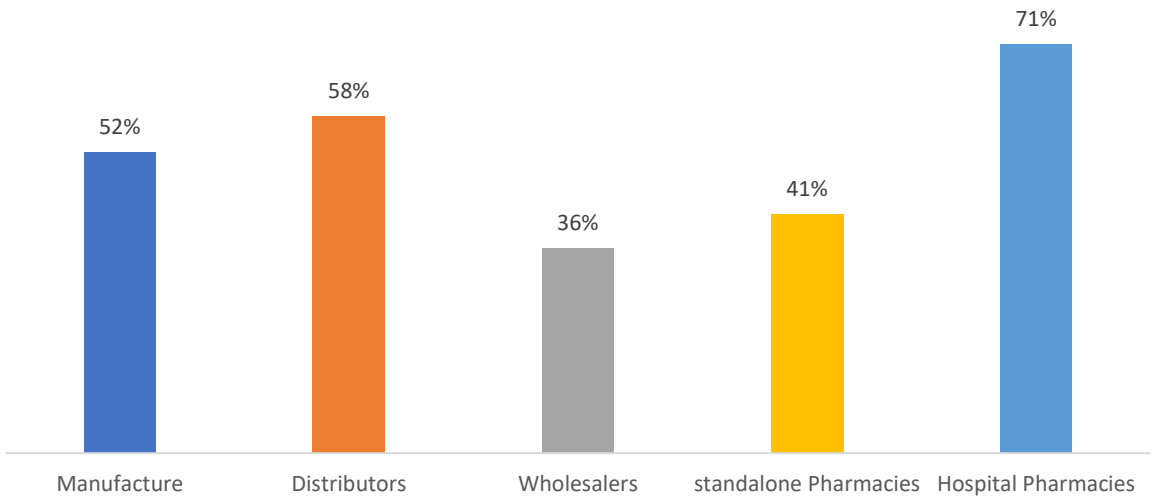


FIGURE 87: CHANGE IN DEMAND FOR OXYGEN CONCENTRATOR

The data on the increase in demand for nebulizers following the Trade Margin Rationalization (TMR) notification in 2021 reveals significant shifts in market dynamics among various stakeholders. Notably, 52% of manufacturers witnessed a moderate increase in demand, while 58% of distributors and 41% standalone pharmacies witnessed more substantial rise. 71% of Hospital pharmacies recorded the highest surge in demand, indicating a critical need for nebulizers in healthcare settings. However, 36% of wholesalers witnessed a comparatively lower increase, suggesting potential challenges in supply chain adaptation or market dynamics specific to this segment.

In conclusion, the TMR notification has evidently stimulated demand for nebulizers across multiple segments of the healthcare supply chain, aligning with the objectives and goals of the policy. The notable increase in demand reflects improved accessibility and affordability of essential medical devices, which is crucial, especially in the context of respiratory healthcare needs. The data underscores the effectiveness of TMR in addressing market inefficiencies and ensuring equitable

distribution of nebulizers, ultimately enhancing access to vital healthcare equipment for patients in need.

Following the implementation of the TMR notification, importers have witnessed a notable increase in demand for nebulizers. The data reveals that 61% of importers witnessed a surge in demand for these medical devices, indicating a heightened need for respiratory therapy and treatment post-notification. With only 10% perceived a decrease and 29% indicating no change, the majority of importers have experienced a rise in demand for nebulizers, suggesting a growing emphasis on respiratory health management in the wake of the TMR notification.

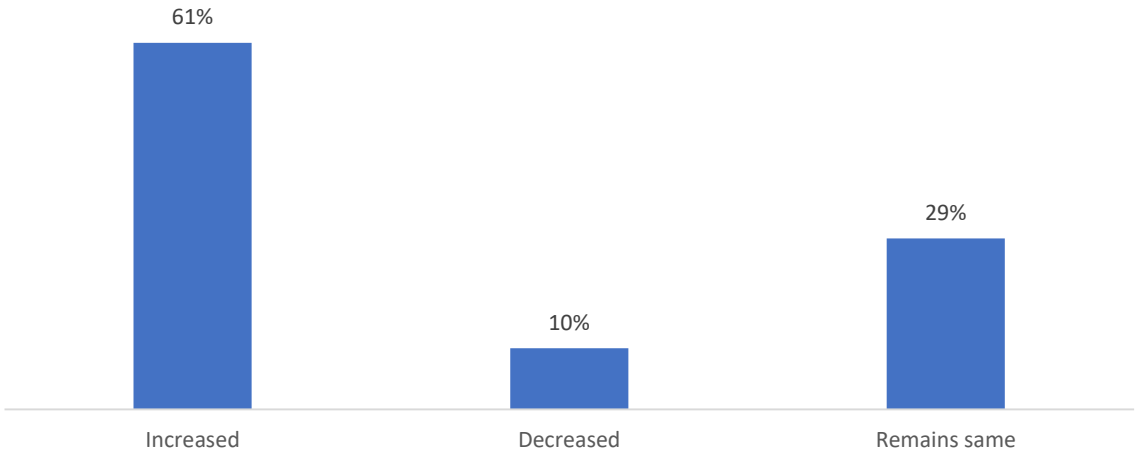


FIGURE 88: IMPORTERS – CHANGE IN DEMAND

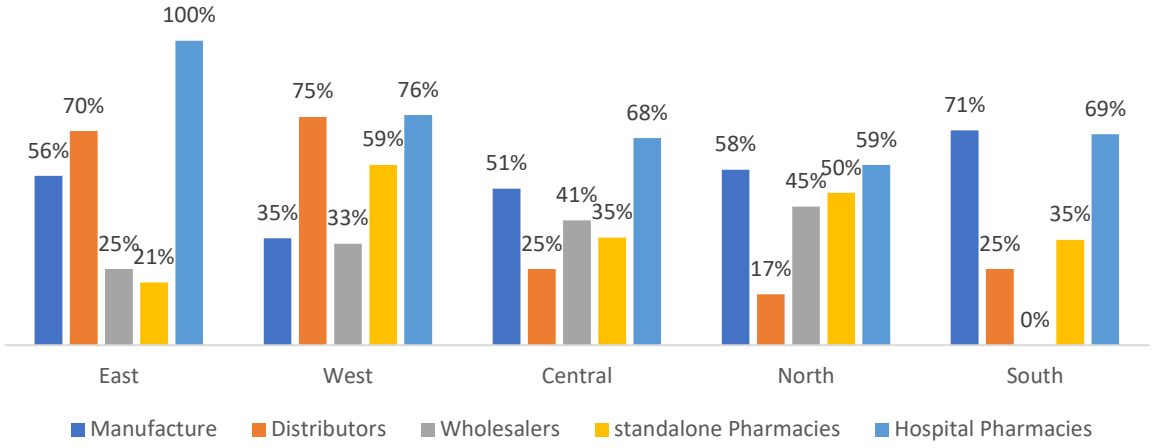


FIGURE 89: REGION WISE CHANGE IN DEMAND FOR NEBULIZER

The provided data illustrates the change in demand for nebulizers following the Trade Margin Rationalization (TMR) notification in 2021 across various stakeholders and regions. Overall, there has been a noticeable increase in demand post-notification, with an average of 54% of respondents reporting this uptick. This indicates that the TMR policy has played a role in stimulating demand for nebulizers, which are essential medical devices for respiratory care.

Region-wise analysis reveals interesting trends in demand fluctuations. In the East and South regions, the majority of respondents reported an increase in demand, with percentages of respondents ranging

from 56% to 71%. This suggests that the TMR policy has been particularly effective in these regions, potentially due to higher awareness of respiratory health issues and the importance of nebulizers in treatment.

In the West and Central regions, while there is still an increase in demand, the percentages vary. The 35% of West region respondents indicating a moderate increase, while the 51% of Central region exhibits a more significant increase. These variations may reflect differences in healthcare infrastructure, economic conditions, and awareness levels about respiratory illnesses and their management.

Analysing demand by distribution channels provides additional insights. Hospital pharmacies, particularly in the East and South regions, experience a significant surge in demand, reaching 100% of respondents in the East. This emphasizes the crucial role of hospital pharmacies in providing access to nebulizers for patients in need of respiratory support.

Wholesalers, on the other hand, show lower increases in demand across all regions, indicating potential challenges in distribution or supply chain dynamics. This underscores the importance of optimizing distribution networks to ensure timely access to nebulizers in all regions.

In conclusion, the data suggests that the TMR notification has successfully stimulated demand for nebulizers, aligning with its objectives of enhancing affordability and accessibility of essential medical devices. The increased demand reflects a growing recognition of the importance of respiratory healthcare and the role of nebulizers in managing respiratory conditions. Continued monitoring and targeted interventions will be essential to address regional disparities and ensure equitable access to nebulizers for patients across diverse healthcare settings. By fostering a supportive environment for the adoption of nebulizers, the TMR policy can contribute to improved respiratory health outcomes and overall patient well-being.

7.6.3 Change in Sales for Nebulizer

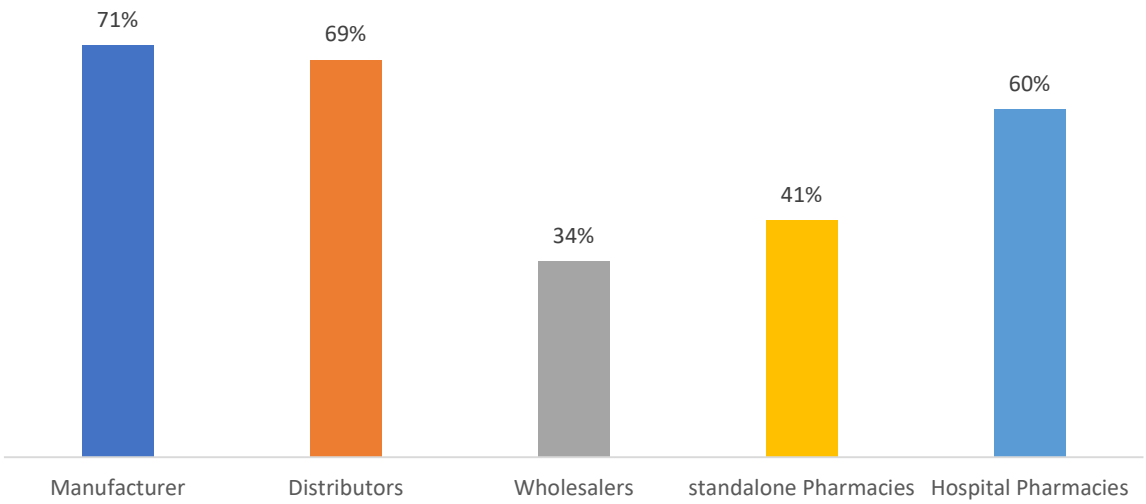


FIGURE 90: CHANGE IN SALES FOR NEBULIZER

The data regarding the increase in sales of nebulizers post the Trade Margin Rationalization (TMR) notification in 2021 reflects significant shifts in market dynamics among various stakeholders. Notably, 71% of manufacturers and 69% of distributors witnessed robust increases in sales, indicating a substantial demand for nebulizers in both production and distribution channels. However, 34% of

wholesalers witnessed a relatively lower increase in sales, suggesting potential challenges or complexities within the wholesale segment of the supply chain.

In conclusion, the TMR notification appears to have positively impacted the sales of nebulizers, aligning with its objectives and goals of improving accessibility and affordability of essential medical devices. The notable increases reported by manufacturers and distributors, along with moderate rises in pharmacy and hospital sales, suggest an overall positive influence on the healthcare supply chain. By rationalizing trade margins, TMR has facilitated a more streamlined distribution of nebulizers, ensuring better access to critical medical equipment for patients in need. This data underscores the efficacy of TMR in addressing market inefficiencies, fostering fair pricing, and ultimately contributing to enhanced healthcare outcomes for individuals and healthcare providers alike.

Since the implementation of the TMR notification suggests a significant increase in sales. Approximately 50% of importers witnessed a surge in sales for nebulizers, indicating a heightened demand for respiratory therapy devices post-notification. With only 8% of respondents indicating a decrease and 42% indicating no change, the data underscores a clear trend towards increased sales of nebulizers among importers. This reflects a growing emphasis on respiratory health management and the importance of access to respiratory treatment, indicating a notable shift in healthcare priorities and consumer behaviour in response to the TMR notification.

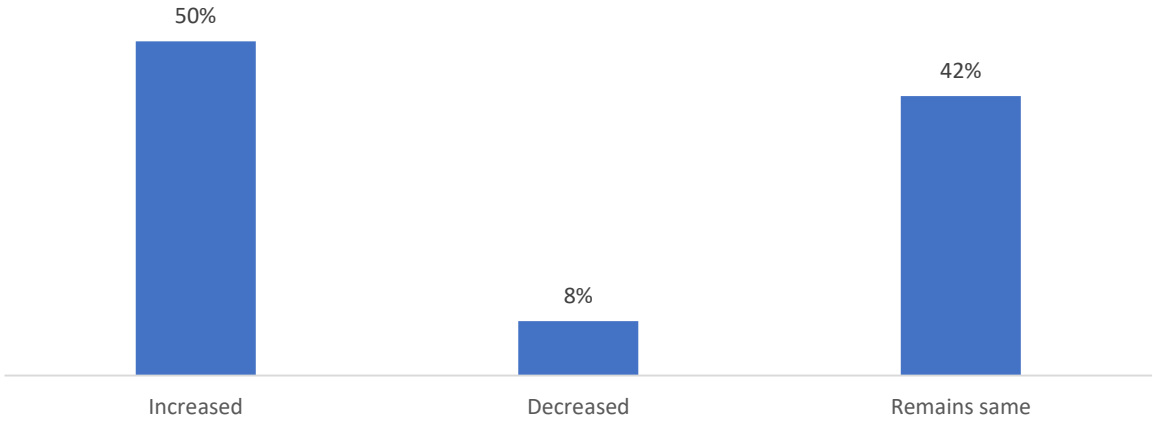


FIGURE 91: IMPORTERS – CHANGE IN SALES PERFORMANCE

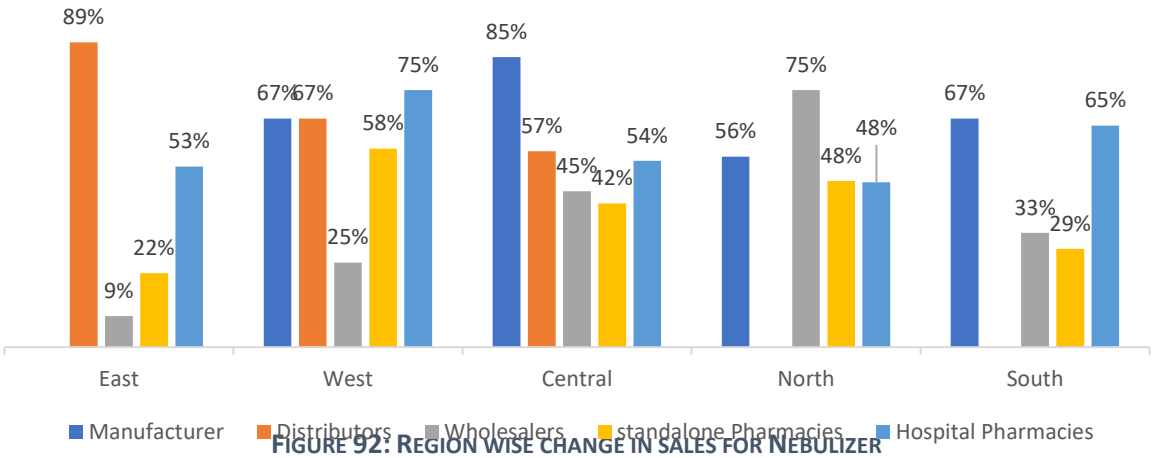


FIGURE 92: REGION WISE CHANGE IN SALES FOR NEBULIZER

The provided data illustrates the impact of Trade Margin Rationalization (TMR) on the sales of nebulizers across different regions, as reported by various stakeholders. Examining the changes in sales post-TMR notification sheds light on how the policy has influenced market dynamics and accessibility of nebulizers across various regions and stakeholder groups.

Beginning with the Eastern region, while there's no specific data on manufacturer response, 89% of distributors witnessed a significant increase in sales. This suggests that the TMR policy has effectively incentivized distributors to promote and distribute nebulizers, making them more accessible in the Eastern region. Hospital pharmacies also show a considerable increase, indicating a positive response among healthcare institutions.

In the Western region, substantial increases in sales are witnessed across the board, with 67% of manufacturers, 67% of distributors, 25% of wholesalers,58% of retailers, and 75% of hospital pharmacies all experiencing notable growth. This indicates a widespread positive response to the TMR policy, leading to improved accessibility and affordability of nebulizers in the Western region.

Moving to the Central region, significant increases in sales are reported across all stakeholder categories, with 85% of manufacturers leading the trend. This suggests that the TMR policy has effectively stimulated demand and improved accessibility to nebulizers in the Central region, aligning with its objectives of making medical devices more accessible and affordable.

In the Northern region, 75% of wholesalers witnessed the highest increase in sales, followed by 56% of manufacturers and 48% of hospital pharmacies. However, distributors and standalone pharmacies report no change or modest increases. This indicates that while the TMR policy has had a positive impact on certain segments of the market, it may not have been equally effective across all stakeholders in the North.

In the Southern region, 67% of manufacturers and 33% of wholesalers report significant increases in sales, while hospital pharmacies also show notable improvements. However, distributors and standalone pharmacies report no change or modest increases. This indicates a varied response to the TMR policy among different stakeholder groups within the region.

In conclusion, the data suggests that the Trade Margin Rationalization (TMR) policy implemented in 2021 has generally had a positive impact on the sales of nebulizers across various regions. The significant increases in sales reported by manufacturers, distributors, wholesalers, retailers, and hospital pharmacies indicate that the TMR policy has effectively addressed pricing and distribution challenges, making nebulizers more accessible and affordable.

Overall, the TMR policy seems to be aligned with its objectives and goals of improving market efficiency, affordability, and accessibility of essential medical devices like nebulizers. By reducing trade margins and promoting fair pricing practices, the TMR policy has facilitated greater access to nebulizers, which are vital for respiratory care. It has also encouraged active participation from stakeholders across the supply chain, ensuring that nebulizers reach those in need more effectively, ultimately contributing to improved healthcare outcomes.

7.6.4 Change in Price for Nebulizer

The provided data illustrates the changes in the price of Nebulizer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

FIGURE 93: CHANGE IN PRICE FOR NEBULIZER

Among the various stakeholders involved in the nebulizer device market, 70% of distributors play a significant role in influencing prices, with the highest percentage in increase in costs. This underscores their role in determining the market pricing for these medical devices. Also 43% of standalone pharmacies, 60% of wholesalers' respondents witnessed increase in costs, indicates a widespread trend of pressure on margins on the distribution chain.

In the value chain for nebulizer devices, manufacturers set the initial prices for the devices. Distributors play a critical role in determining the market prices based on factors such as demand, supply, competition, and operational costs. Wholesalers may act as intermediaries, adjusting their prices accordingly. Standalone pharmacies and Hospital pharmacies procure these devices at prevailing market prices, with Hospital pharmacies potentially incurring higher costs due to increased healthcare expenses. Pricing dynamics are influenced by various factors, including production costs, supply chain disruptions, and shifts in demand and supply dynamics.

Since the implementation of the TMR notification indicates a significant decrease in Costs, with 53% of importers witnessed a reduction. This decline in costs likely contributes to increased demand and sales of nebulizers, as lower costs enhance accessibility for individuals requiring respiratory treatment. With only 9% respondents indicating an increase in costs and 38% indicating no change, the data underscores the effectiveness of the TMR notification in positively influencing affordability and accessibility in healthcare. This represents a favourable outcome of the TMR notification, aligning with its goal to improve access to critical medical devices like nebulizers for respiratory therapy.

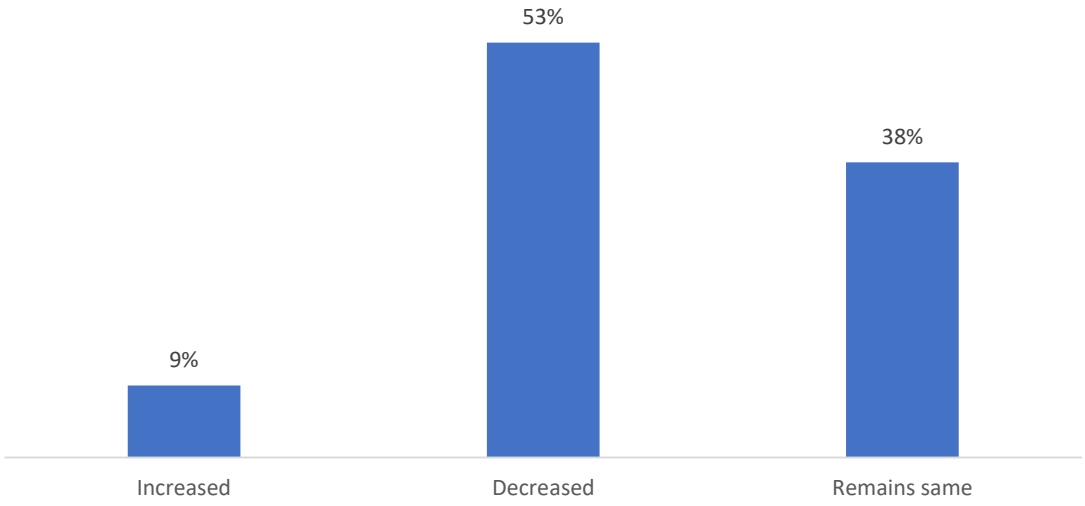


FIGURE 94: IMPORTERS – PRICING PERCEPTION

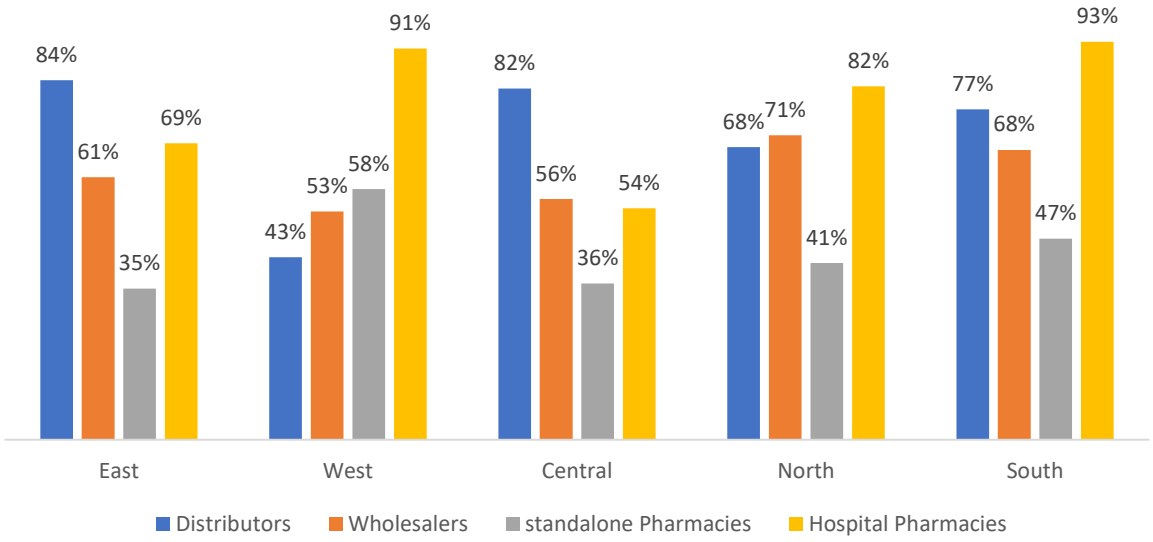


FIGURE 95: REGION WISE CHANGE IN PRICE FOR NEBULIZER

The data provided outlines the percentage of respondents who observed an increase in costs post-notification of Trade Margin Rationalization (TMR) on nebulizers across different stakeholders and regions. Analysing the trends in increased costs provides insights into how the TMR policy has influenced pricing dynamics and the associated implications for stakeholders.

In the Eastern region, a significant majority of respondents across all stakeholder categories reported increased costs, with 69% of hospital pharmacy respondents witnessed the highest percentage. This indicates potential challenges in cost management despite the TMR policy's objectives to rationalize trade margins and improve affordability.

In the Western region, a substantial number of respondents across all categories witnessed increased costs, with 91% of hospital pharmacies respondents being the most affected. This suggests that despite efforts to rationalize trade margins, there are challenges in containing costs for nebulizers in the Western region.

Moving to the Central region, a high percentage of respondents across all stakeholder categories witnessed increased costs, with 82% of distributors witnessed the highest increase. This indicates potential difficulties in cost containment post-TMR notification, despite the policy's intent to improve market efficiency and affordability.

In the Northern region, a significant majority of respondents reported increased costs, with 82% of hospital pharmacies witnessed notable increases. This suggests ongoing challenges in cost management despite the TMR policy's objectives to enhance transparency and fairness in pricing.

In the Southern region, a substantial proportion of respondents across all stakeholder categories reported increased costs, with 93% of hospital pharmacies witnessed the highest percentage. This underscores the challenges in containing costs for nebulizers post-TMR notification, despite efforts to rationalize trade margins.

In conclusion, while the Trade Margin Rationalization (TMR) policy aims to rationalize trade margins and improve affordability and accessibility of medical devices like nebulizers, the data suggests ongoing challenges in containing costs across various regions and stakeholder categories. Despite the TMR notification, a significant number of respondents reported increased costs, indicating potential market complexities and external factors influencing pricing dynamics.

However, it's essential to recognize that the TMR policy represents a significant step towards addressing pricing inefficiencies and enhancing transparency in the medical device market. By aligning trade margins with market realities and promoting fair pricing practices, the TMR policy can contribute to long-term improvements in affordability and accessibility of essential medical devices. Continued monitoring and adjustments may be necessary to ensure the policy's effectiveness and alignment with its objectives across different regions and stakeholder groups.

7.6.5 Change in Quality for Nebulizer

The provided data illustrates the changes in the quality of Nebulizer Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

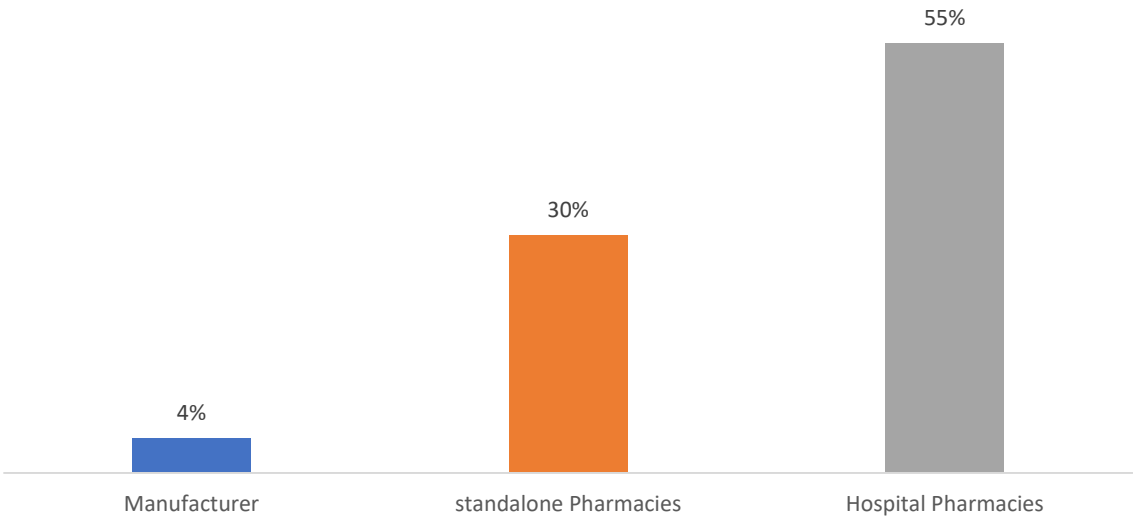


FIGURE 96: CHANGE IN QUALITY FOR NEBULIZER

In the post-TMR notification scenario, stakeholders, particularly hospital pharmacies, perceive an improvement in the quality of nebulizer devices, with an overall 55% of respondents. Distributors play a crucial role in maintaining or enhancing quality. Overall, the perception of improved quality is consistent across regions.

In the value chain for nebulizer devices, manufacturers are responsible for the production and quality control of the devices. Distributors play a pivotal role in ensuring that these high-quality devices reach the market and end-users without compromising their quality. Hospital pharmacies and standalone pharmacies procure and stock these devices, offering them to healthcare professionals and patients. The perception of improved quality is crucial for maintaining trust and confidence in the entire supply chain, as it assures stakeholders that they are receiving safe and effective medical equipment.

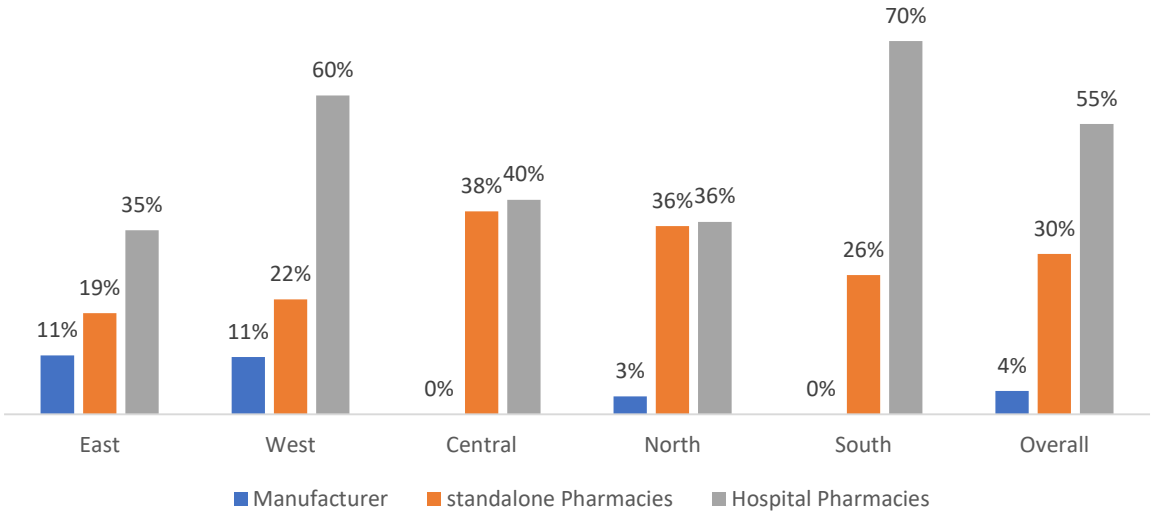


FIGURE 97: REGION WISE CHANGE IN QUALITY FOR NEBULIZER

In the South region, there is a substantial increase in quality across all stakeholders, with hospital pharmacies reporting the highest increase in quality perceived 70% of respondents. This suggests a significant focus on ensuring high-quality nebulizer devices, possibly driven by increased demand for reliable medical equipment.

The East region also experiences an overall increase in quality, with hospital pharmacies witnessed the highest increase in quality perceived by 50% of respondents. This indicates that stakeholders involved in the distribution of these devices perceive improvements in quality post-COVID.

In the North region, manufacturers report an increase in quality, while standalone pharmacies and hospital pharmacies show substantial improvements. This reflects the importance of maintaining high standards in medical device quality in healthcare settings.

In the West region, stakeholders, particularly hospital pharmacies, report improvements in quality. Distributors and standalone pharmacies also perceive quality enhancements, albeit to a slightly lesser degree.

In conclusion, stakeholders, especially hospital pharmacies, perceive an improvement in the quality of nebulizer devices post-TMR notification highlighting the significance of maintaining high-quality standards in the healthcare supply chain. This perception of enhanced quality is likely a response to the increased scrutiny of medical equipment quality during the pandemic, underscoring the importance of quality control measures throughout the value chain.

7.7 Cardiac Stents

The primary examination focused on Cardiac Stents, evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.7.1 Change in Supply for Cardiac Stents

The provided data illustrates the changes in the supply of Cardiac Stents Post-2021, segmented into different regions and supply channels including wholesalers, distributors, and manufacturers.

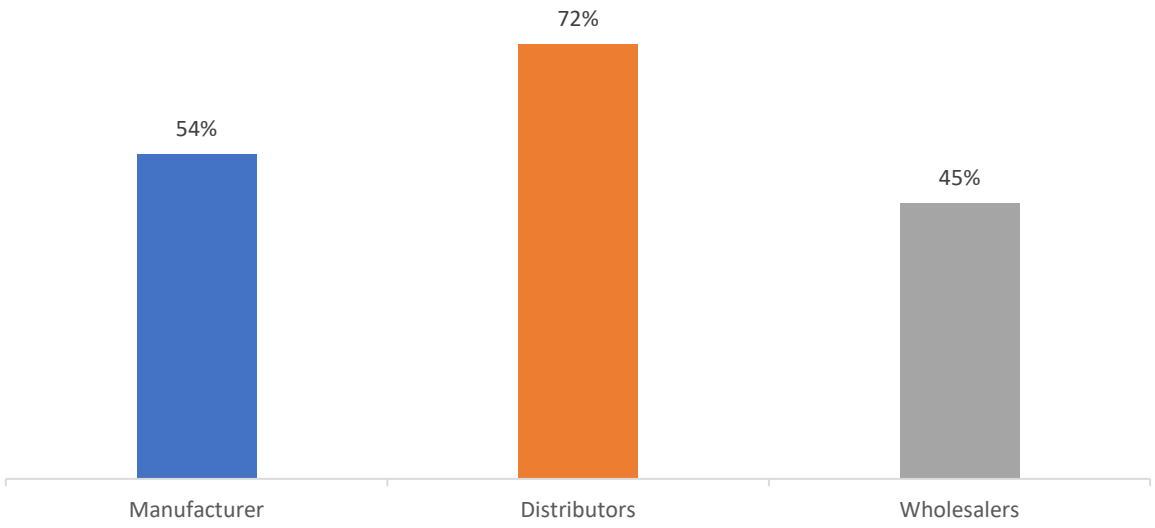


FIGURE 98: CHANGE IN SUPPLY FOR CARDIAC STENTS

The data indicates significant increase in supply post notification on fixation of ceiling prices for the cardiac stents with 54% of manufacturers, 72% of distributors and 45% of wholesaler respondents witnessed a significant increase in supply.

The data indicates significant supply chain challenges for Cardiac Stents during the post-2021 with a 54% of respondents witnessed increase in lead times, 25% of respondents witnessed difficulty in sourcing raw materials, 14% of respondents witnessed delays in shipping, and 7% of respondents witnessed disruptions in manufacturing for importers. These challenges likely resulted in limited availability and increased costs for Cardiac Stents. However, the NPPA notification on ceiling prices likely played a crucial role in mitigating the impact by ensuring more consistent pricing structures for Cardiac Stents. This regulatory intervention likely helped stabilize the market, ensuring continued access to Cardiac Stents despite the supply chain disruptions caused by the pandemic. In summary, the implementation of the fixation of ceiling prices policy for cardiac/coronary stents has demonstrated a positive impact on the supply chain across diverse regions. The data underscores how this policy has effectively bolstered the availability and distribution of cardiac stents, thereby enhancing accessibility for patients in need.

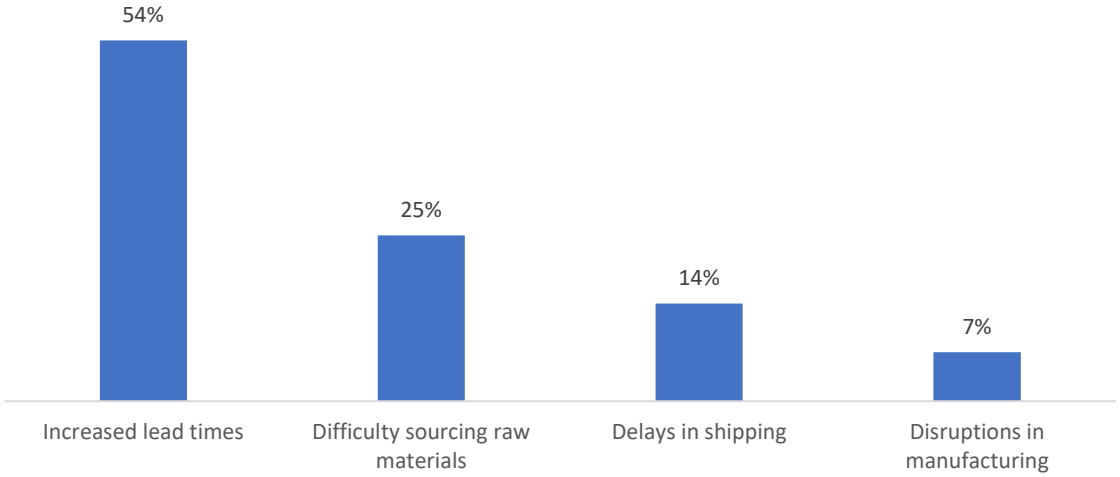


FIGURE 99: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

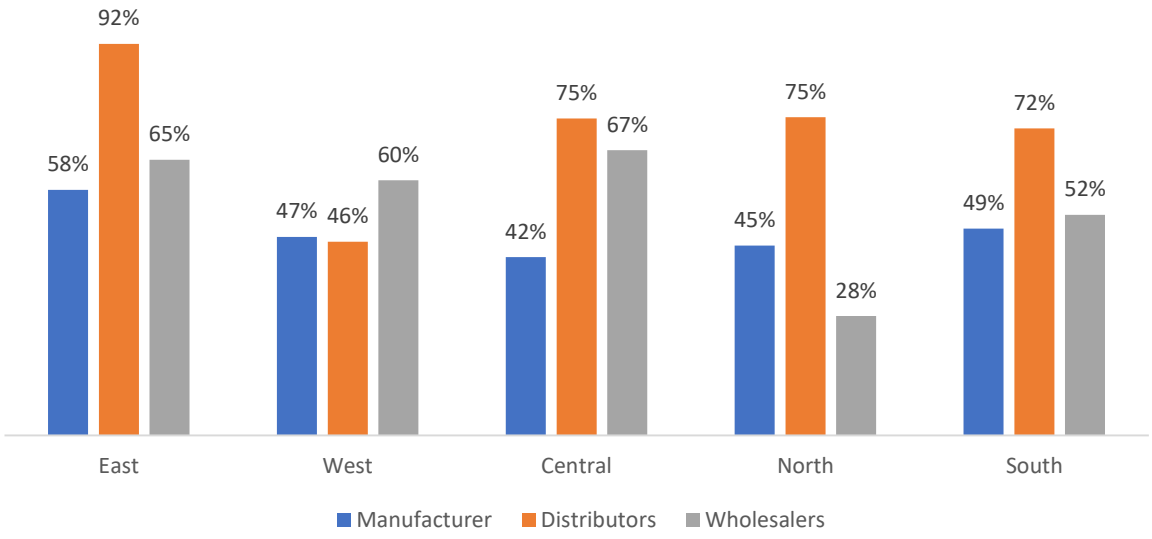


FIGURE 100: REGION WISE CHANGE IN SUPPLY FOR CARDIAC STENTS

The data provided highlights the percentage of respondents who observed an increase in supply post-notification of fixation of ceiling prices on cardiac/coronary stents across different stakeholders and regions. Analysing the trends in increased supply offers insights into how the fixation of ceiling prices policy has influenced the availability and distribution of cardiac stents and the associated implications for stakeholders.

In the Eastern region, the majority of respondents across all stakeholder categories witnessed an increase in supply, with 92% of distributors respondents witnessed the highest percentage. This indicates that the fixation of ceiling prices has likely stimulated the supply chain, making cardiac stents more readily available in the Eastern region.

In the Western region, while the percentage of respondents reporting an increase in supply is lower compared to the East, a substantial number of distributors 46% and wholesalers 60% of respondents witnessed increased supply. This suggests that the fixation of ceiling prices policy has positively

impacted the availability of cardiac stents in the Western region, albeit to a slightly lesser extent than in the East.

Moving to the Central region, a significant percentage of respondents across all stakeholder categories reported increased supply, with wholesalers 67% of respondents leading the trend. This indicates that the fixation of ceiling prices policy has effectively stimulated the supply chain, improving access to cardiac stents in the Central region.

In the Northern region, while 45% of manufacturers and 75% of distributors witnessed relatively high percentages of increased supply, 28% of wholesalers witnessed a lower percentage. This suggests that while there has been an increase in supply among certain stakeholders, there may be challenges in distribution or market dynamics affecting wholesalers in the Northern region.

In the Southern region, a substantial proportion of respondents across all stakeholder categories reported increased supply, with 72% of distributors witnessed the highest percentage. This indicates that the fixation of ceiling prices policy has been successful in improving the availability of cardiac stents in the Southern region.

In conclusion, the fixation of ceiling prices policy on cardiac/coronary stents has had a positive impact on the supply chain across various regions. The data suggests that the policy has effectively stimulated the availability and distribution of cardiac stents, making them more accessible to patients in need.

By fixing ceiling prices, the policy aims to make essential medical devices more affordable and accessible, ensuring that patients have access to life-saving treatments without facing exorbitant costs. The increase in supply reported by stakeholders across different regions indicates that the policy is aligned with its objectives and goals of improving healthcare affordability and accessibility.

Continued monitoring and enforcement of the fixation of ceiling prices policy will be crucial to ensure its long-term effectiveness and sustainability in addressing healthcare disparities and ensuring equitable access to essential medical devices like cardiac stents across regions and stakeholder groups.

7.7.2 Change in Demand for Cardiac Stents

The provided data illustrates the changes in the demand of Cardiac Stents Post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

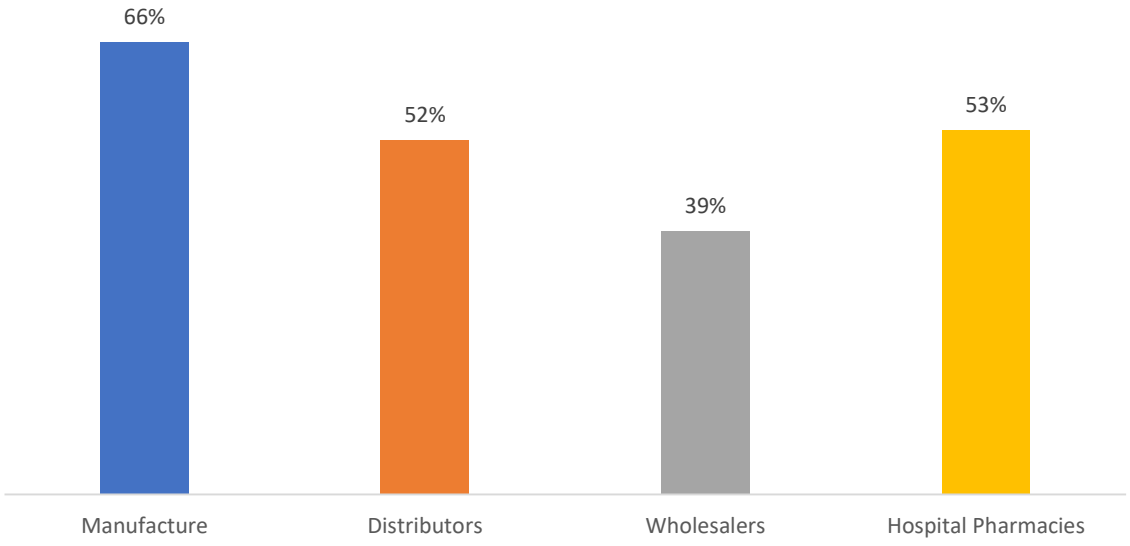


FIGURE 101: CHANGE IN DEMAND FOR CARDIAC STENTS

In the post-2021 scenario, manufacturers and hospitals play significant roles in driving the demand for cardiac stent devices, with 66% of manufacturers witnessed the highest overall percentage of respondents. Distributors also have a notable influence on demand. Overall, the demand for cardiac stent devices has seen a substantial increase, with the highest overall increase in demand from East region witnessed by 66% of respondents.

To conclude, the implementation of the fixation of ceiling prices policy for cardiac/coronary stents has yielded a favourable impact on demand across various regions. The data indicates a notable increase in demand, signifying that the policy has effectively spurred interest and uptake of cardiac stents among patients in need.

The overarching objective of setting ceiling prices is to render essential medical devices more financially attainable and readily available to patients. By imposing price constraints, the policy endeavours to ensure that individuals can access vital life-saving treatments without encountering excessive financial burdens. The observed surge in demand reported by stakeholders from diverse regions strongly suggests that the policy is effectively advancing its overarching goals of enhancing healthcare affordability and accessibility.

In the value chain for cardiac stent devices, manufacturers are responsible for the production and quality control of the devices. Distributors play a pivotal role in distributing these devices to various geographic regions, ensuring their availability to hospitals and healthcare facilities. Wholesalers may act as intermediaries, stocking these devices for distribution to retailers and hospitals. Hospitals use cardiac stents in cardiovascular interventions to save lives and improve patient outcomes. The flow of products in the value chain is influenced by factors such as regional demand, supply capacity, healthcare infrastructure, and marketing strategies.

Since the implementation of the NPPA notification on fixation of ceiling prices indicates a significant increase in demand. Approximately 57% of importers witnessed a surge in demand for cardiac stents, reflecting a heightened necessity for cardiovascular intervention post-notification. With only 8% witnessed a decrease and 35% of respondents indicating no change, the data underscores a clear trend towards increased demand for cardiac stents among importers. This suggests a growing emphasis on cardiovascular health management and treatment interventions in response to the NPPA notification, highlighting the importance of cardiac care in healthcare priorities.

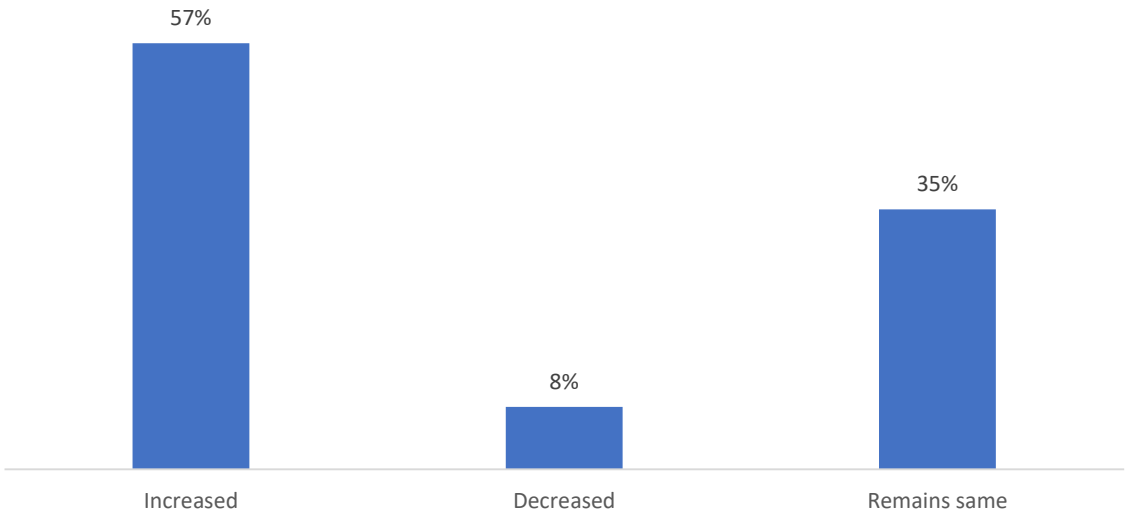


FIGURE 102: IMPORTERS – CHANGE IN DEMAND

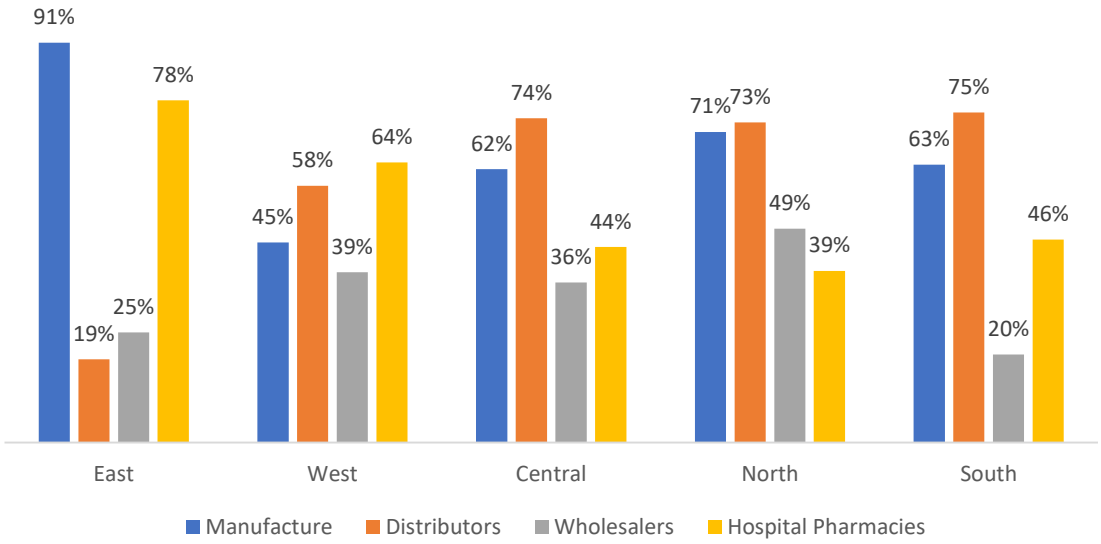


FIGURE 103: REGION WISE CHANGE IN DEMAND FOR CARDIAC STENTS

In the East region, manufacturers and hospitals exhibit increase in demand for cardiac stent devices, with 8% of hospital pharmacies witnessed increase in demand. This region demonstrates the highest overall increase in in demand.

The South region also experiences a notable overall increase in demand, with manufacturers and hospital pharmacies leading the way. Distributors and wholesalers also contribute significantly to demand, indicating a comprehensive approach to meeting healthcare needs.

The North region shows a balanced pattern of demand, with manufacturers, distributors, and hospitals reporting high demand. Hospital pharmacies also exhibit substantial growth in demand, highlighting the importance of cardiac stents in cardiovascular interventions.

In the Central and West regions, manufacturers and distributors drive demand, while hospital pharmacies and wholesalers also play significant roles. This balanced demand pattern suggests the importance of various stakeholders in addressing healthcare requirements.

In summary, the implementation of the fixation of ceiling prices policy for cardiac/coronary stents has shown a positive impact on demand across diverse regions. The data highlights how this policy has effectively stimulated interest and demand for cardiac stents, thereby improving accessibility for patients in need.

The primary aim of establishing ceiling prices is to make essential medical devices more financially feasible and widely available. This policy strives to ensure that patients can access crucial life-saving treatments without facing excessively high costs. The documented increase in demand reported by stakeholders from various regions strongly indicates that the policy is successfully achieving its intended goals of enhancing healthcare affordability and accessibility.

Overall, the fixation of ceiling prices policy represents a significant step towards fostering a more equitable healthcare environment. Its success in driving heightened demand for cardiac stents underscores its alignment with broader objectives aimed at improving healthcare accessibility for

individuals from all walks of life. Continued implementation and enforcement of this policy will be vital in sustaining its positive impact on healthcare demand and patient welfare.

7.7.3 Change in Sales for Cardiac Stents

The data provided highlights the percentage of respondents who observed an increase in sales post-notification of fixation of ceiling prices on cardiac/coronary stents across different stakeholders and regions. Analysing the trends in increased sales offers insights into how the fixation of ceiling prices policy has influenced the availability and distribution of cardiac stents and the associated implications for stakeholders.

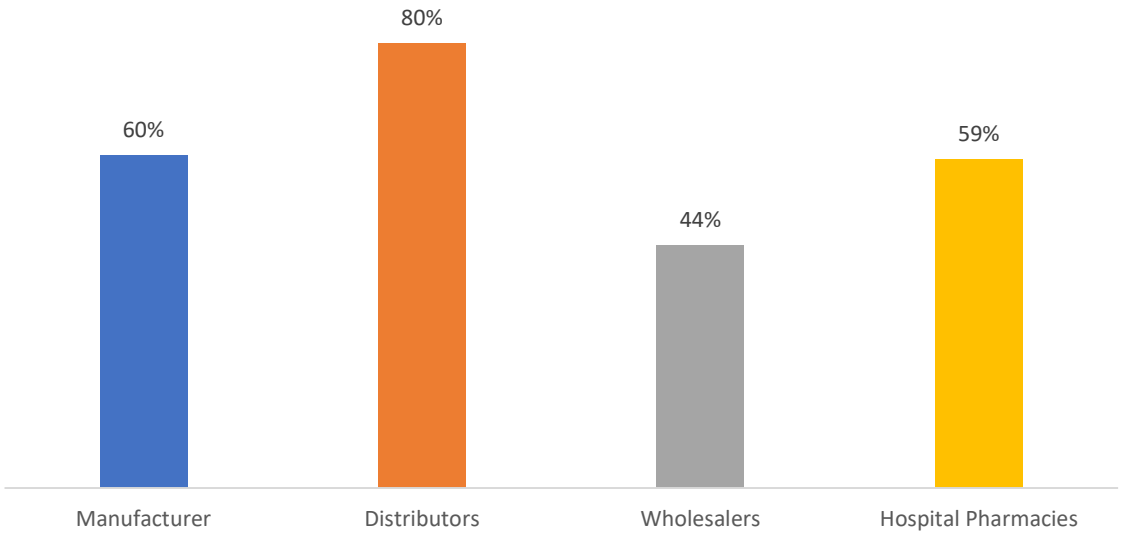


FIGURE 104: CHANGE IN SALES FOR CARDIAC STENTS

In the data provided for Cardiac Stents sales post-2021, 80% of distributors again stands out and witnessed the highest increase in sales percentage, followed by 60% of manufacturers, 44% of wholesalers, and 59% of hospital pharmacy respondents witnessed the increase in sales post notification on fixation of ceiling prices. This underscores the significant role distributors play in the supply chain for Cardiac Stents, possibly due to their well-established distribution networks and proximity to healthcare facilities.

The value chain for Cardiac Stents starts with manufacturers producing the devices. Distributors then procure these devices and distribute them to various stakeholders, including hospital pharmacies. Hospital pharmacies, in turn, use the Cardiac Stents in medical procedures to treat patients. Wholesalers may be involved in the distribution process but are less prominent in this value chain. This seamless flow of products ensures that Cardiac Stents reach healthcare facilities efficiently, ultimately benefiting patients in need of these critical medical devices.

Since the implementation of the NPPA notification on ceiling prices it suggests a notable increase in sales. About 49% of importers reported a surge in sales for cardiac stents, indicating a heightened demand for cardiovascular interventions post-notification. With only 11% of respondents witnessed a decrease and 40% respondents indicating no change, the data underscores a clear trend towards increased sales of cardiac stents among importers. This reflects a growing emphasis on cardiovascular health management and the need for advanced treatment options, indicating a significant shift in healthcare priorities and consumer behaviour following the NPPA notification.

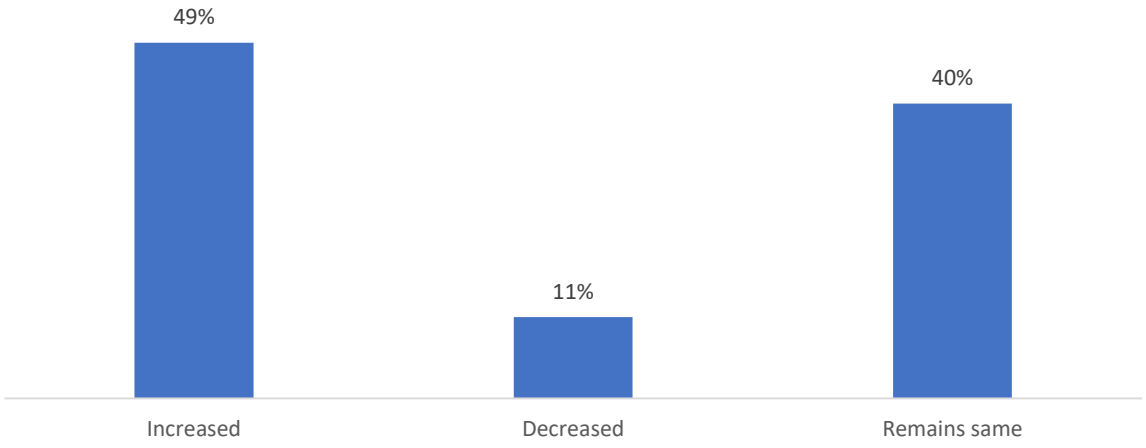


FIGURE 105: IMPORTERS – CHANGE IN SALES PERFORMANCE

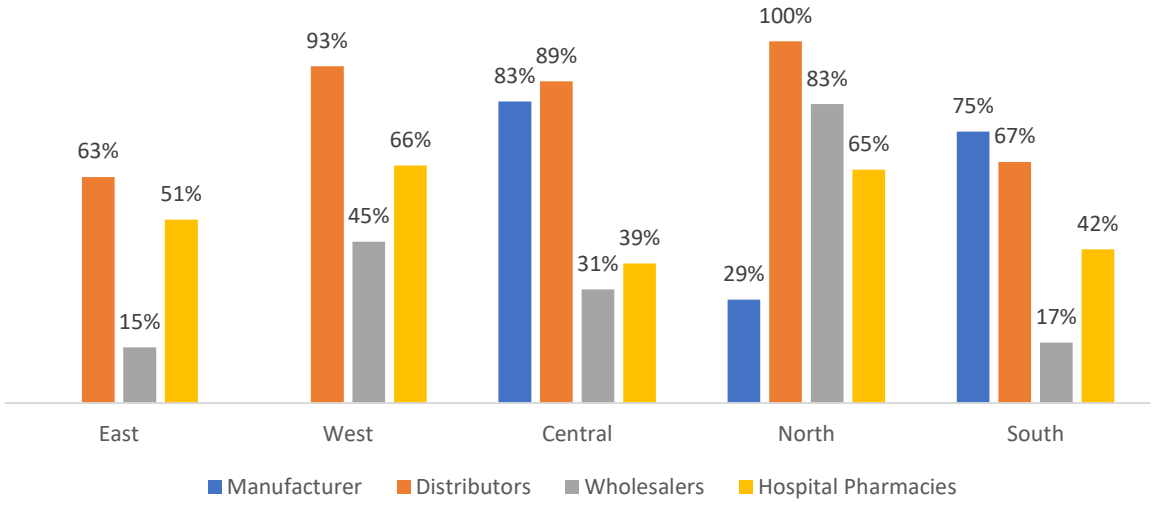


FIGURE 106: REGION WISE CHANGE IN SALES FOR CARDIAC STENTS

The East region has an unusual value, since the sampling is statistically insignificant for manufacturer sales, possibly indicating a data anomaly. 63% of Distributors and 15% of wholesalers are active witnessed with increase in sales, while 51% of hospital pharmacies witnessed significant increase in sales. The low sales in this region may be attributed to factors like pricing or competitive market dynamics.

In the West, 93% of distributors witnessed increase in sales, followed by 66% of hospital pharmacies. No change witnessed by Manufacturers. This region's high sales can be attributed to its advanced healthcare infrastructure and possibly a higher prevalence of cardiac conditions.

The Central region experienced a notable increase in sales witnessed by 83% of manufacturer respondents, indicating a boost in local production or demand. 89% of Distributors and 39% of hospital pharmacies respondents witnessed increase in sales. 31% of wholesaler respondents witnessed an increase in sales could be due to their lesser involvement in the supply chain.

The North region witnessed a 100% of increase in sales witnessed by distributor respondents, reflecting a surge in demand. 65% of Hospital pharmacies and 83% of wholesaler's respondents witnessed substantial growth. The higher sales could be a result of increased healthcare awareness or population growth.

The South region exhibits a significant increase in sales for 75% of manufacturers and 67% of distributor sales. 42% of Hospital pharmacies and 17% of wholesalers witnessed the increase in sales. The sales increase could be driven by various factors, such as improved product availability or marketing efforts.

In conclusion, distributors remain the dominant force in the Cardiac Stents supply chain across regions, and fluctuations in sales can be attributed to regional healthcare demand, local production capacity, and competitive factors.

7.7.4 Change in Price for Cardiac Stents

The data provided highlights the percentage of respondents who observed an increase in costs post-notification of fixation of ceiling prices on cardiac/coronary stents across different stakeholders and regions. Analysing the trends in increased costs offers insights into how the fixation of ceiling prices policy has influenced the availability and distribution of cardiac stents and the associated implications for stakeholders.

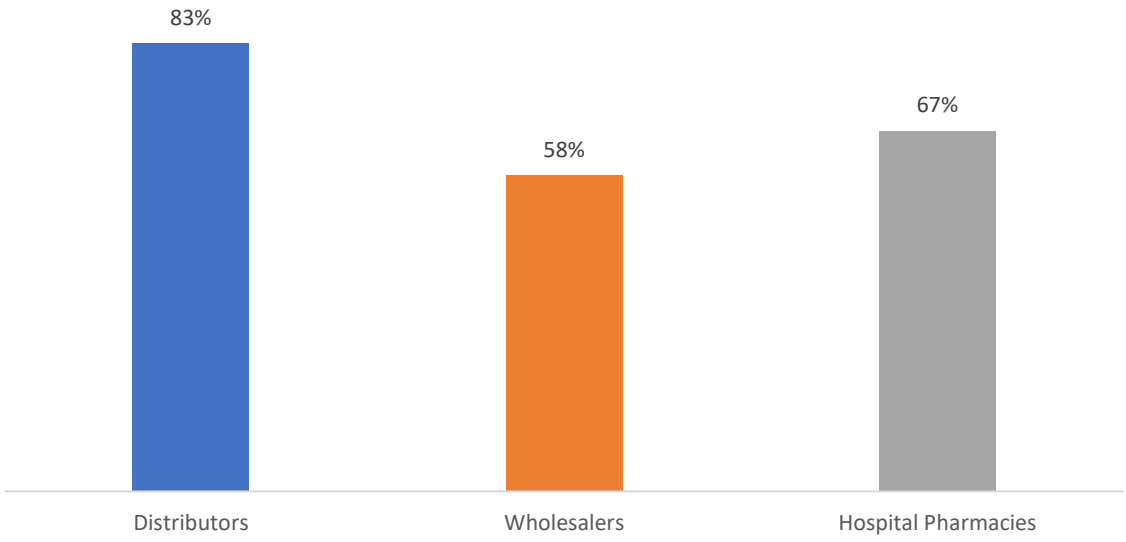


FIGURE 107: CHANGE IN PRICE FOR CARDIAC STENTS

In the post-2021 scenario, distributors, and hospital pharmacies both have a significant influence on the increase in costs for cardiac stent devices, with distributors having the highest overall 83% of respondents witnessed an increase in costs. Also 67% of hospital pharmacy respondents witnessed the increase in costs and 58% of wholesaler respondents.

In the value chain for cardiac stent devices, manufacturers produce the devices and set the initial prices. Distributors play a pivotal role in distributing these devices to various geographic regions, ensuring their availability to hospitals and healthcare facilities. Hospitals procure and use cardiac stent devices in cardiovascular interventions to save lives and improve patient outcomes. The flow of products in the value chain is influenced by factors such as regional demand, supply capacity, healthcare infrastructure, and willingness to invest in quality medical equipment.

Since the implementation of the NPPA notification on ceiling prices it indicates a significant decrease in costs, with 65% of importers witnessed a reduction. This decline in costs is likely because of the margins set are low between stakeholders and also to have contributed to increased demand and sales of cardiac stents, as lower costs make these life-saving medical devices more accessible to patients in need. With only 8% of respondents witnessed an increase in prices and 26% of respondents indicating no change, the data underscores the effectiveness of the NPPA notification on ceiling prices positively impacting affordability and accessibility in healthcare. This demonstrates a favourable outcome of the NPPA notification, aligning with its objective to improve access to critical medical devices like cardiac stents for cardiovascular interventions.

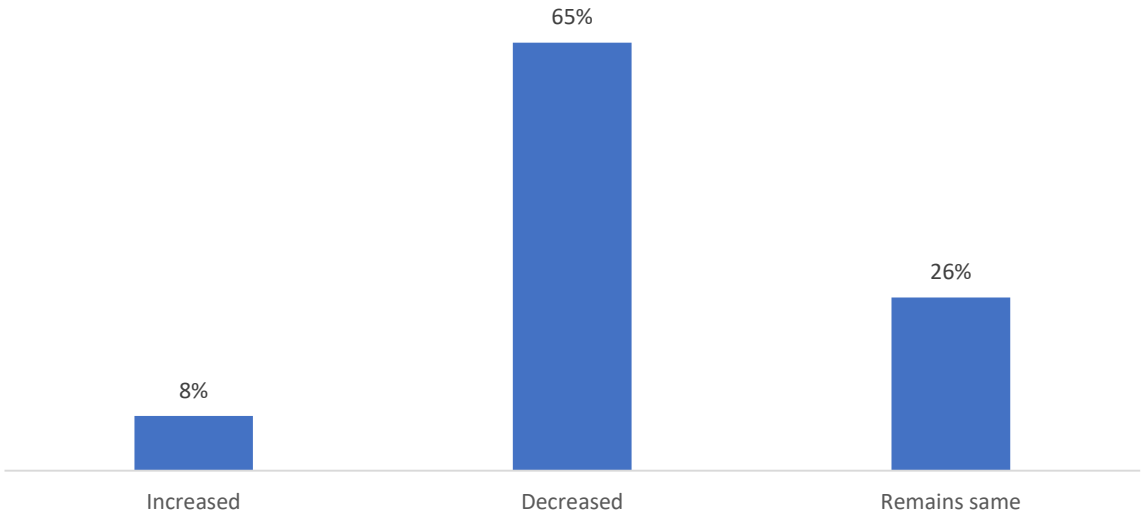


FIGURE 108: IMPORTERS – PRICING PERCEPTION

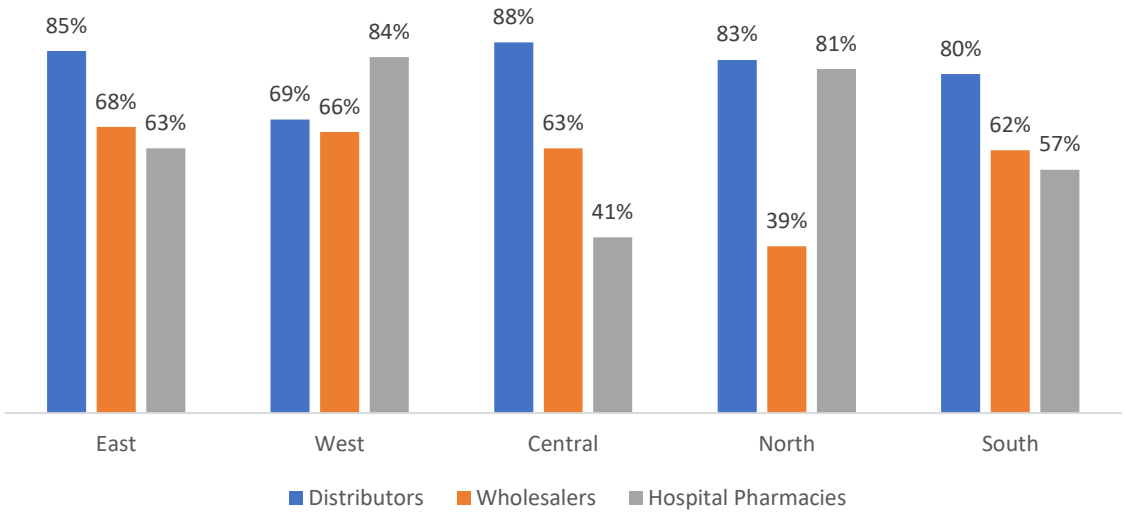


FIGURE 109: REGION WISE CHANGE IN DEMAND FOR CARDIAC STENTS

In the North Region, the cost of cardiac stent devices has seen a substantial overall increase. 29% of Hospital pharmacies in this region witnessed increase in cost, suggesting that healthcare facilities are willing to pay more for these devices.

The Central region also experiences a notable overall increase in cost, with distributors playing a significant role. 24% of Hospital pharmacy respondents witnessed increase in cost, indicating a willingness to invest in high-quality cardiac stents.

In the East region, the overall cost increase is significant, driven by distributors and hospital pharmacies. 24% of Hospital pharmacies in this region witnessed increase in costs, reflecting the importance of quality cardiac stents in healthcare.

The South region shows a balanced pattern of cost change, with distributors and hospital pharmacies witnessed to the overall increase. 15% of Hospitals in this region witnessed increase in cost.

The West region exhibits the highest overall increase in price witnessed by 84% of distributors and hospital pharmacies both playing substantial roles. 12% of Hospital pharmacies in this region witnessed an increase in price.

Distributors and hospitals have a significant impact on the change in price for cardiac stent devices, with regional variations influenced by factors like quality, market dynamics, and healthcare investment priorities. The value chain involves multiple stakeholders working together to ensure that high-quality cardiac stent devices are accessible to those in need, particularly in the context of cardiovascular health post-2021.

In summary, the implementation of the fixation of ceiling prices policy for cardiac/coronary stents has shown a positive impact on costs across diverse regions. The data highlights how this policy has effectively stimulated interest and demand for cardiac stents, thereby improving accessibility for patients in need.

The primary aim of establishing ceiling prices is to make essential medical devices more financially feasible and widely available. This policy strives to ensure that patients can access crucial life-saving treatments without facing excessively high costs.

7.7.5 Change in Quality for Cardiac Stents

In the post-2021 scenario, hospitals have a significant influence on the increase in quality for cardiac stent devices, with the 47% of respondents witnessed the increase in quality post notification on fixation of ceiling prices on cardiac stents. only 1% of Manufacturers witnessed the increase in quality, with an overall 1% of respondents witnessed the increase in quality. Overall, the quality of cardiac stent devices has seen a modest improvement, driven primarily by hospitals.

In the value chain for cardiac stent devices, manufacturers are responsible for producing high-quality devices that meet regulatory standards. Hospitals procure and use these devices in cardiovascular interventions, making quality a critical factor for patient safety and outcomes. Manufacturers and hospitals collaborate to ensure that the devices meet the highest quality standards and are safe for patient use. The flow of products in the value chain is influenced by factors such as regulatory compliance, quality control, and the commitment to providing the best possible care to patients.

In the North region, the quality of cardiac stent devices has seen a significant overall improvement. 50% of Hospital pharmacies in this region witnessed the increase in quality, suggesting a focus on providing high-quality healthcare services.

The East region also experiences an overall improvement in quality, with hospitals playing a crucial role. 51% of Hospital pharmacies in this region witnessed an increase in quality, reflecting an emphasis on patient outcomes and safety.

The West region shows a moderate overall improvement in quality, with 46% of hospital pharmacies in this region witnessed an increase in quality. 5% of Manufacturers in this region witnessed a quality improvement.

In the Central region, quality has improved modestly, with hospital pharmacies and manufacturers playing roles. 27% of Hospital pharmacies in this region witnessed an increase in quality, while 3% of manufacturers witnessed increase.

The South region exhibits an overall improvement in quality, driven primarily by hospitals, with a 46% witnessed the increase in quality.

In summary, the implementation of the fixation of ceiling prices policy for cardiac/coronary stents has positively influenced the quality of available products post-notification across diverse regions. The data indicates how this policy has effectively prompted manufacturers and suppliers to maintain or enhance the quality standards of cardiac stents, thus improving the overall accessibility and reliability of these life-saving medical devices for patients in need.

The primary objective behind establishing ceiling prices is to ensure that essential medical devices maintain high-quality standards while becoming more financially accessible and widely available. By regulating prices, this policy aims to prevent compromises in product quality and ensure that patients can confidently access critical life-saving treatments without enduring exorbitant expenses. The observed increase in demand for cardiac stents reported by stakeholders from various regions strongly suggests that the policy is indeed fulfilling its intended objectives of enhancing healthcare affordability and accessibility without compromising on quality.

7.8 Knee Implants

The primary examination focused on Knee Implants evaluating various factors such as pricing, demand, quality, sales, and the perspectives of different stakeholders, including manufacturers, importers, standalone pharmacies, hospital pharmacies, wholesalers, and distributors. This analysis aimed to understand the impact after the price regulation measures implemented by the NPPA.

7.8.1 Change in Supply for Knee Implants

The provided data illustrates the changes in the supply of knee implants post-2021, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

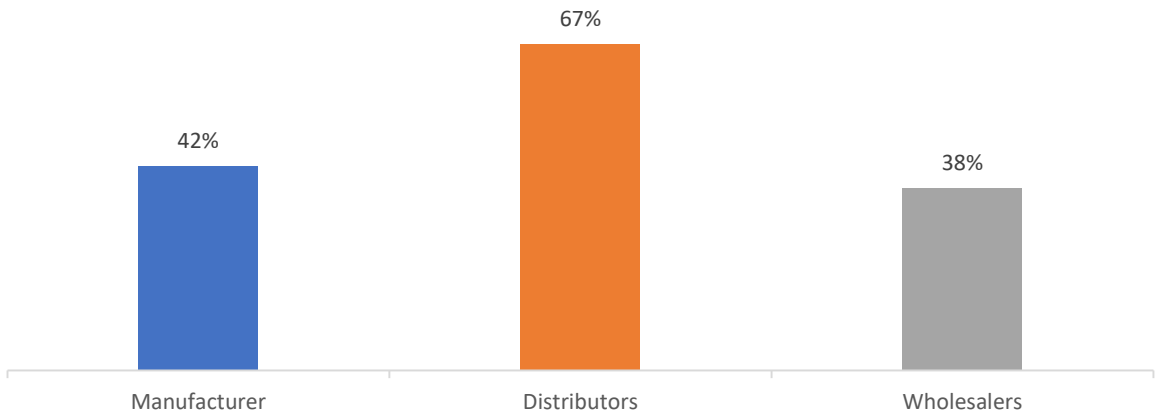


FIGURE 110:CHANGE IN SUPPLY FOR KNEE IMPLANTS

In the post-2021 scenario, 67% of distributors have a substantial influence on the supply of knee implant devices witnessed on increase in supply, 42% of Manufacturers also play a role in supply. Also 38% of wholesalers witnessed an increase in supply post notification on fixation of ceiling prices for the knee implants.

In summary, the implementation of the fixation of ceiling prices policy for knee implants has positively impacted the supply chain across diverse regions. The data indicates how this policy has effectively bolstered the availability and distribution of knee implants, thereby enhancing accessibility for patients in need of knee replacement surgeries.

The primary objective behind establishing ceiling prices is to ensure that essential medical devices like knee implants become more financially feasible and widely available. By regulating prices, this policy aims to prevent artificial inflation and ensure that patients can access necessary treatments without encountering exorbitant expenses. The documented increase in supply reported by stakeholders from various regions strongly suggests that the policy is indeed fulfilling its intended goals of enhancing healthcare affordability and accessibility.

In the value chain for knee implant devices, manufacturers are responsible for the production and quality control of the devices. Distributors play a pivotal role in distributing these devices to various geographic regions, ensuring their availability to hospitals and healthcare facilities. Wholesalers may act as intermediaries, stocking these devices for distribution to retailers and hospitals. Hospitals use knee implants in orthopaedic surgeries to improve patients' quality of life. The flow of products in the value chain is influenced by factors such as regional demand, supply capacity, healthcare

infrastructure, and the commitment to providing the best possible care to patients in need of joint replacements.

in post-2021, 55% of importers witnessed an increase in lead times, 19% of respondents witnessed difficulty in sourcing raw materials, 17% of respondents perceived delays in shipping, and 10% of respondents indicated disruptions in manufacturing for importers. These obstacles likely led to restricted availability and escalated costs for Knee Implants. However, the NPPA notification on ceiling of prices likely played a vital role in mitigating the impact by ensuring more stable pricing structures for Knee Implants. This regulatory intervention likely helped stabilize the market, ensuring continued access to Knee Implants despite the supply chain disruptions caused by the pandemic.

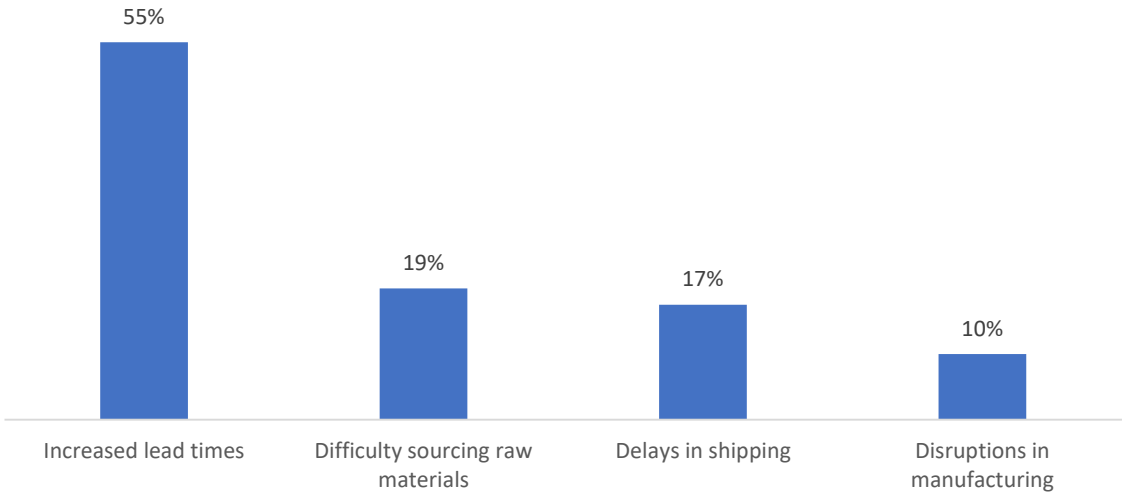


FIGURE 111: IMPORTERS – SUPPLY CHAIN DISRUPTIONS

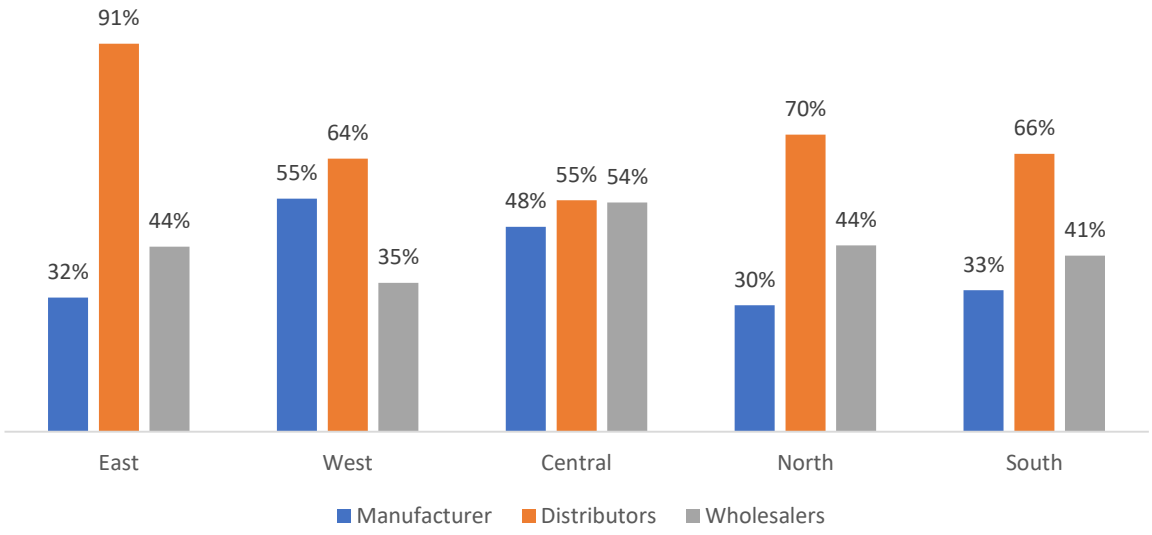


FIGURE 112: REGION WISE CHANGE IN SUPPLY FOR KNEE IMPLANTS

In the West region, knee implant device supply has seen the highest overall increase, with distributors playing a significant role. This suggests a strong commitment to meeting the demand for knee implants in this region.

The East region also experiences a notable overall increase in supply, driven primarily by distributors and manufacturers. This indicates a comprehensive approach to ensuring the availability of knee implant devices.

The North region shows a balanced pattern of supply, with distributors and manufacturers contributing to the overall increase. Central stakeholders also play a significant role in supply.

In the South region, there is an overall increase in supply, with distributors and manufacturers as key players. Central stakeholders also contribute to supply in this region.

The Central region exhibits an overall increase in supply, with a balanced contribution from distributors and manufacturers. This reflects the importance of multiple stakeholders in addressing healthcare needs.

To conclude, the implementation of the fixation of ceiling prices policy for knee implants has positively impacted the supply chain across diverse regions. The data indicates how this policy has effectively bolstered the availability and distribution of knee implants, thereby enhancing accessibility for patients in need of knee replacement surgeries.

The primary objective behind establishing ceiling prices is to ensure that essential medical devices like knee implants become more financially feasible and widely available. By regulating prices, this policy aims to prevent artificial inflation and ensure that patients can access necessary treatments without encountering exorbitant expenses. The documented increase in supply reported by stakeholders from various regions strongly suggests that the policy is indeed fulfilling its intended goals of enhancing healthcare affordability and accessibility.

7.8.2 Change in Demand for Knee Implants

The provided data illustrates the changes in the demand of knee implants post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

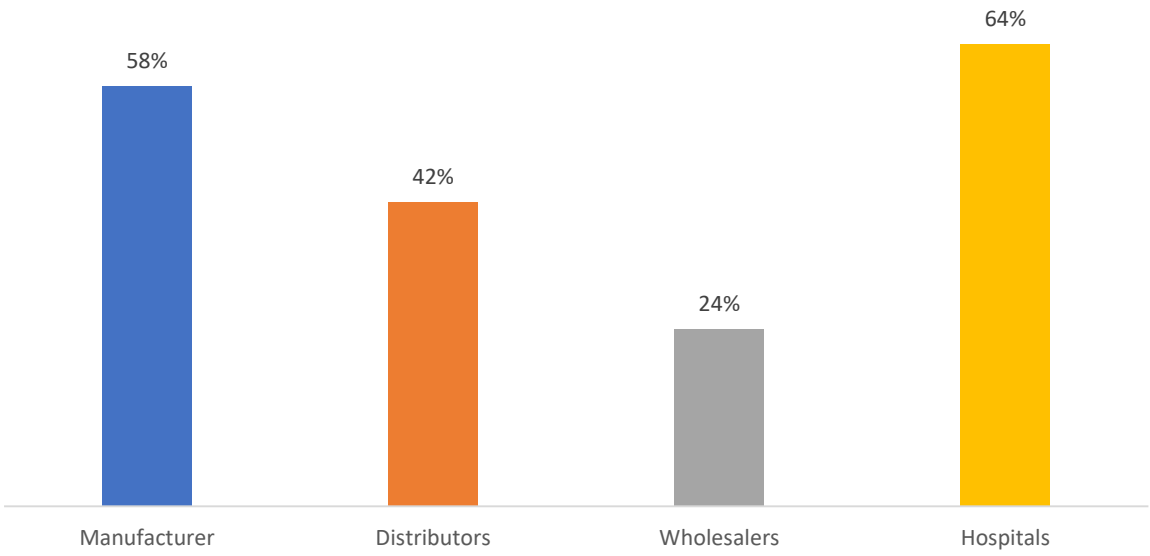


FIGURE 113: CHANGE IN DEMAND FOR KNEE IMPLANTS

In the post-2021 scenario, hospitals have the most significant influence on the increase in demand for knee implant devices, with an 64% of respondents witnessed an increase in demand. 42% of Distributors also play a substantial role in demand. Overall, the demand for knee implant devices

witnessed by the respondents has increased significantly. Also, the 58% of manufacturers and 24% of wholesalers witnessed the increase in demand post notification of fixation of ceiling prices for knee implants.

In the value chain for knee implant devices, manufacturers are responsible for producing high-quality devices and marketing them to distributors and hospitals. Distributors play a crucial role in efficiently distributing these devices to various geographic regions, ensuring their availability to hospitals and healthcare facilities. Hospitals use knee implants in orthopaedic surgeries to enhance patients' quality of life. The flow of products in the value chain is influenced by factors such as regional demand, distribution efficiency, healthcare infrastructure, and the commitment to providing effective orthopaedic care post-COVID.

Since the implementation of the NPPA notification on ceiling prices it indicates a substantial increase in demand. A significant 57% of importers witnessed a surge in demand for knee implants, suggesting a growing need for orthopaedic interventions post-notification. With only 2% respondents indicating a decrease and 40% indicating no change, the data underscores a clear trend towards heightened demand for knee implants among importers. This reflects an increasing focus on addressing knee-related issues and improving mobility, indicating a notable shift in healthcare priorities and patient needs in response to the NPPA notification on fixation of ceiling prices for knee implants.

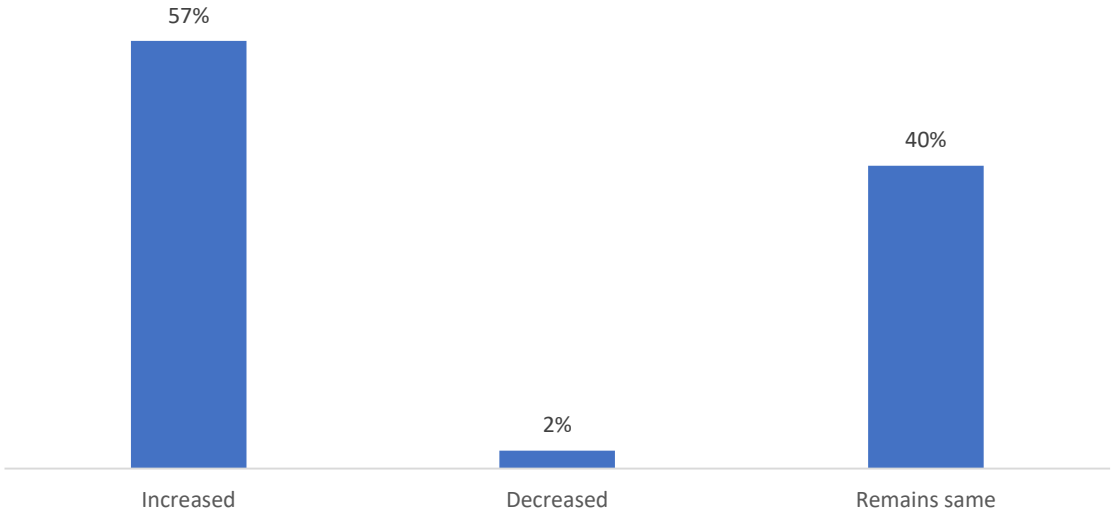


FIGURE 114: IMPORTERS – CHANGE IN DEMAND

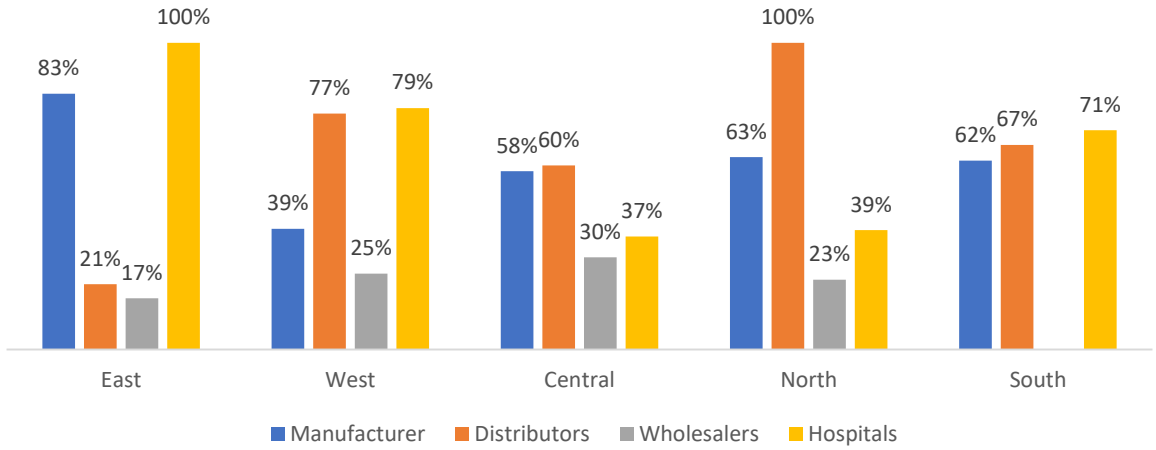


FIGURE 115: REGION WISE CHANGE IN DEMAND FOR KNEE IMPLANTS

The data provided illustrates the percentage of respondents who observed an increase in demand post-notification of fixation of ceiling prices on knee implants across different stakeholders and regions. Analysing the trends in increased demand offers insights into how the fixation of ceiling prices policy has influenced the demand dynamics and the associated implications for stakeholders.

In the Eastern region, a significant majority of respondents across all stakeholder categories witnessed an increase in demand, with 100% of hospital pharmacy respondents witnessed an increase in. This suggests that the fixation of ceiling prices has effectively stimulated demand for knee implants in the Eastern region, indicating improved accessibility for patients in need of knee replacement surgeries.

In the Western region, while the percentage of respondents witnessed an increase in demand varies across stakeholder categories, 77% of distributors and 79% of hospital pharmacies witnessed substantial increases. This indicates that the fixation of ceiling prices policy has positively impacted the demand for knee implants in the Western region, although to a lesser extent compared to the East.

Moving to the Central region, a moderate percentage of respondents across all stakeholder categories reported increased demand, with 58% of manufacturers and 60% of distributors respondents leading the trend. This suggests that the fixation of ceiling prices has contributed to a notable increase in demand for knee implants in the Central region, indicating improved accessibility for patients.

In the Northern region, 100% of distributors witnessed increase in demand, indicating a significant positive impact of the fixation of ceiling prices policy on the demand for knee implants in the region.

In the Southern region, while manufacturers and distributors reported relatively high percentages of increased demand, wholesalers reported no change in demand. This suggests that the impact of the fixation of ceiling prices policy on demand for knee implants may vary within the Southern region, depending on specific market dynamics.

In conclusion, the fixation of ceiling prices policy on knee implants has had a positive impact on demand across various regions. The data indicates that the policy has effectively stimulated interest and demand for knee implants, thereby improving accessibility for patients in need of knee replacement surgeries.

By fixing ceiling prices, the policy aims to make knee implants more financially feasible and widely available, ensuring that patients can access necessary treatments without encountering excessively high costs. The documented increase in demand reported by stakeholders from different regions

strongly suggests that the policy is indeed fulfilling its intended objectives of enhancing healthcare affordability and accessibility.

The fixation of ceiling prices policy represents a significant step towards fostering a healthcare environment where patients can access high-quality medical devices like knee implants at reasonable costs. Its success in stimulating increased demand underscores its alignment with broader objectives aimed at ensuring patients have timely access to necessary treatments. Continued monitoring and enforcement of this policy will be crucial in sustaining its positive impact on healthcare accessibility and patient outcomes.

7.8.3 Change in Sales for Knee Implants

The provided data illustrates the changes in the sales of knee implants post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

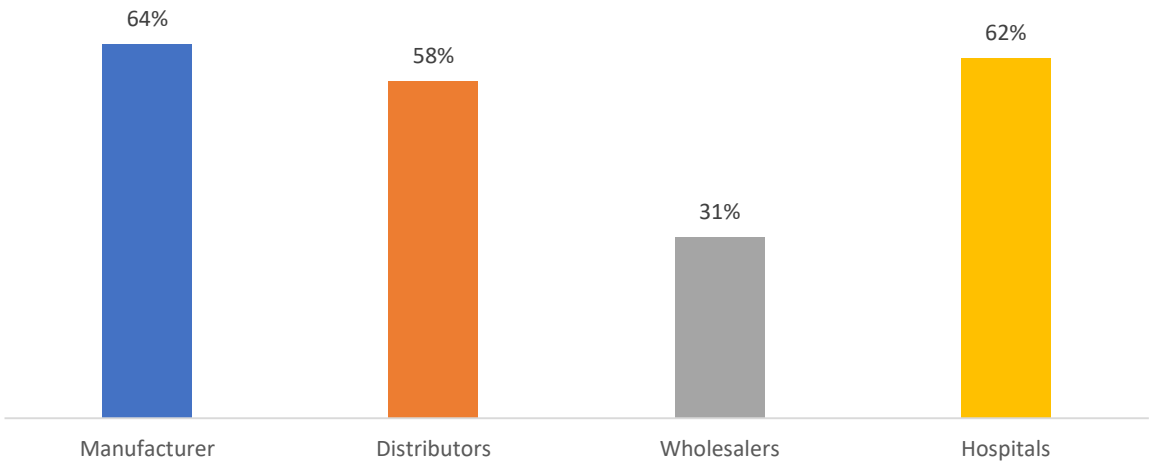


FIGURE 116: CHANGE IN SALES FOR KNEE IMPLANTS

In the post-2021 scenario, hospitals have a significant influence on the change in sales for knee implant devices, with the highest overall 62% of respondents from hospital pharmacies witnessed an increase in sales. Distributors also play a substantial role in sales, with an overall 58% of respondents witnessed. Overall, the sales of knee implant devices have seen a notable increase post notification of NPPA on fixation of ceiling prices on the knee implants.

Since the implementation of the NPPA notification on ceiling prices indicates a significant increase in sales for importers. Approximately 57% of importers witnessed a surge in sales for knee implants, suggesting a heightened demand for orthopaedic procedures and joint replacement surgeries post-notification. With only 7% respondents indicated a decrease and 36% indicating no change, the data highlights a clear trend towards increased sales of knee implants among importers. This reflects a growing emphasis on addressing orthopaedic issues and improving mobility, indicating a notable shift in healthcare priorities and patient needs following the NPPA notification.

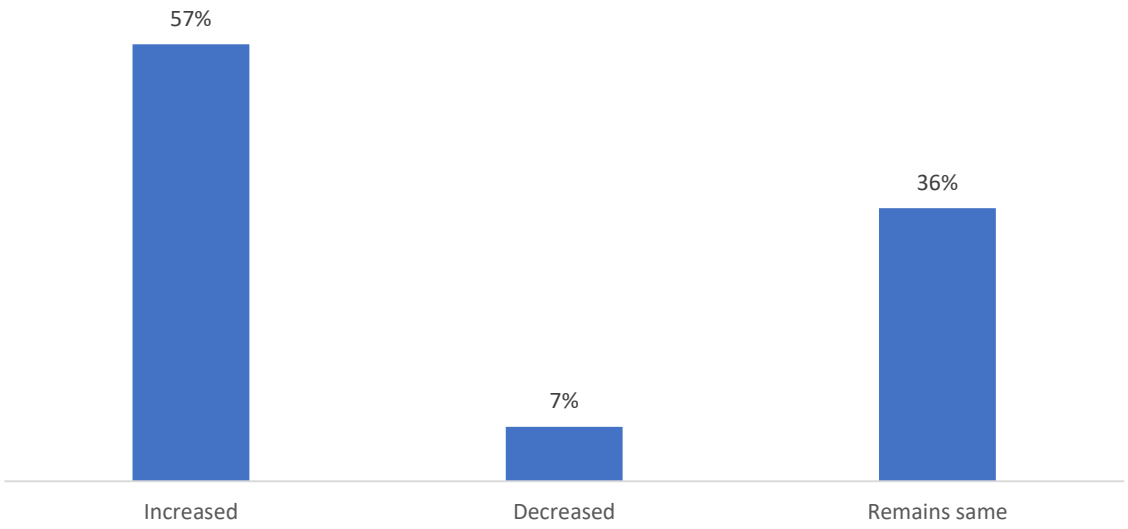


FIGURE 117: IMPORTERS – CHANGE IN SALES PERFORMANCE

In the value chain for knee implant devices, manufacturers are responsible for producing high-quality devices and marketing them to distributors and hospitals. Distributors play a pivotal role in distributing these devices to various geographic regions, ensuring their availability to hospitals and healthcare facilities. Hospitals use knee implants in orthopaedic surgeries to improve patients' quality of life. The flow of products in the value chain is influenced by factors such as regional demand, distribution efficiency, healthcare infrastructure, and the commitment to providing the best possible care to patients in need of joint replacements.

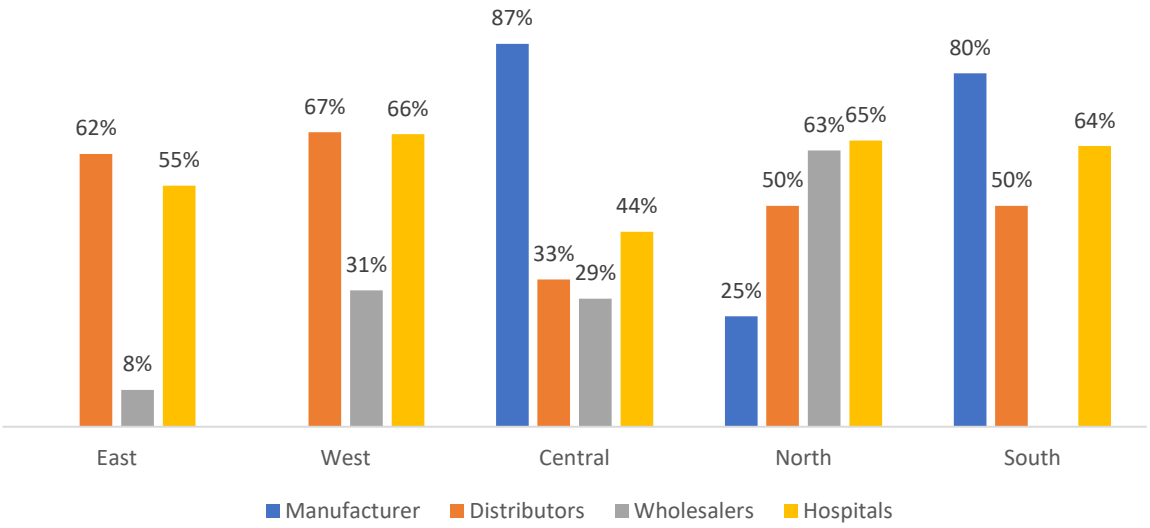


FIGURE 118: REGION WISE CHANGE IN SALES FOR KNEE IMPLANTS

In the Central region, knee implant device sales have seen the highest overall increase, primarily driven by manufacturers and hospitals. This suggests a comprehensive approach to meeting the demand for knee implants in this region.

The South region also experiences a significant overall increase in sales, with distributors and hospitals as key players. Central stakeholders also contribute to sales in this region.

The East region shows a balanced pattern of sales, with distributors playing a significant role. 41% of Hospital pharmacies witnessed an increase in sales, reflecting the importance of healthcare facilities in this region.

In the North region, there is an overall increase in sales, with distributors and hospitals contributing significantly. Manufacturers also play a role in driving sales.

The West region exhibits an overall increase in sales, with hospitals as the primary driver. 50% of Manufacturers witnessed an increase in sales post notification.

In summary, the implementation of the fixation of ceiling prices policy for knee implants has shown a positive impact on sales across diverse regions. The data highlights how this policy has effectively stimulated interest and sales for knee implants, thereby improving accessibility for patients in need of knee replacement surgeries.

The primary aim of establishing ceiling prices is to make essential medical devices more financially feasible and widely available. This policy strives to ensure that patients can access crucial treatments without facing excessively high costs. The documented increase in demand reported by stakeholders from various regions strongly indicates that the policy is successfully achieving its intended goals of enhancing healthcare affordability and accessibility.

7.8.4 Change in Price for Knee Implants

The provided data illustrates the changes in the price of knee implants post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

FIGURE 119: CHANGE IN PRICE FOR KNEE IMPLANTS

In the post-2021 scenario, distributors have the most significant influence on the increase in cost for knee implant devices, with an overall 71% of respondents of distributors witnessed the increase. 88% of hospital pharmacies witnessed a substantial role in influencing costs. Also, the 44% of respondents of wholesalers witnessed an increase in costs post notification on fixation of ceiling prices for knee implants.

In the value chain for knee implant devices, manufacturers produce high-quality devices, and wholesalers and distributors are responsible for ensuring their efficient distribution to hospitals and healthcare facilities. Hospitals utilize knee implants in orthopaedic surgeries, and the pricing of these devices can be influenced by factors such as manufacturing costs, supply chain disruptions, and market

demand. The flow of products in the value chain is impacted by these factors, with stakeholders working together to maintain a balance between supply and demand.

Since the implementation of the NPPA notification on ceiling prices indicates a significant decrease in costs, with 71% of importers witnessed a reduction. This cost reduction likely contributes to increased demand and sales of knee implants, as lower costs make these orthopaedic devices more accessible to patients requiring joint replacement surgeries. With only 10% respondents witnessed an increase in costs and 19% indicating no change, the data underscores the effectiveness of the NPPA notification in positively impacting affordability and accessibility in healthcare. This highlights a favourable outcome of the ceiling price notification, aligning with its objective to enhance access to essential medical devices like knee implants for orthopaedic interventions.it also indicates a widespread trend of pressure on margins on the distribution chain.

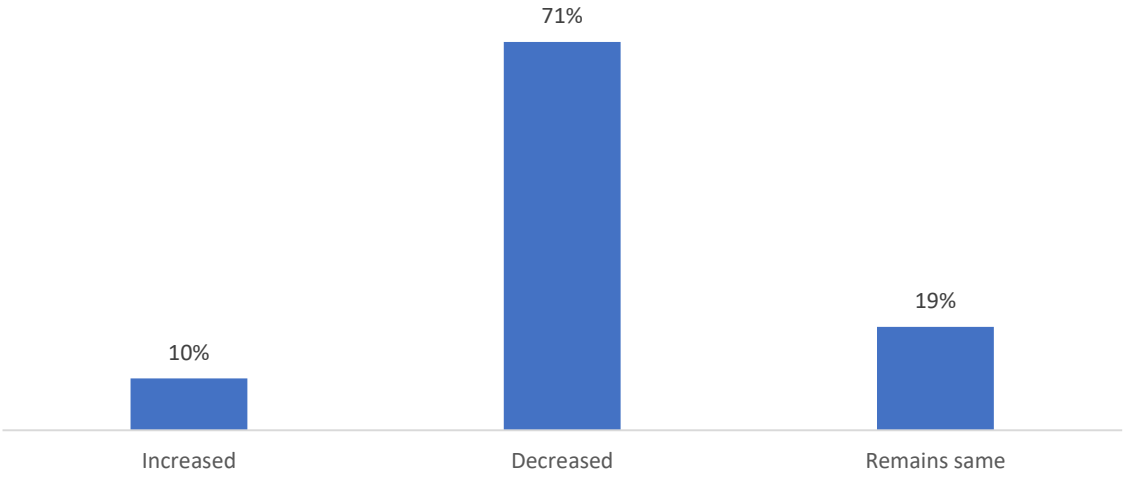


FIGURE 120: IMPORTERS – PRICING PERCEPTION

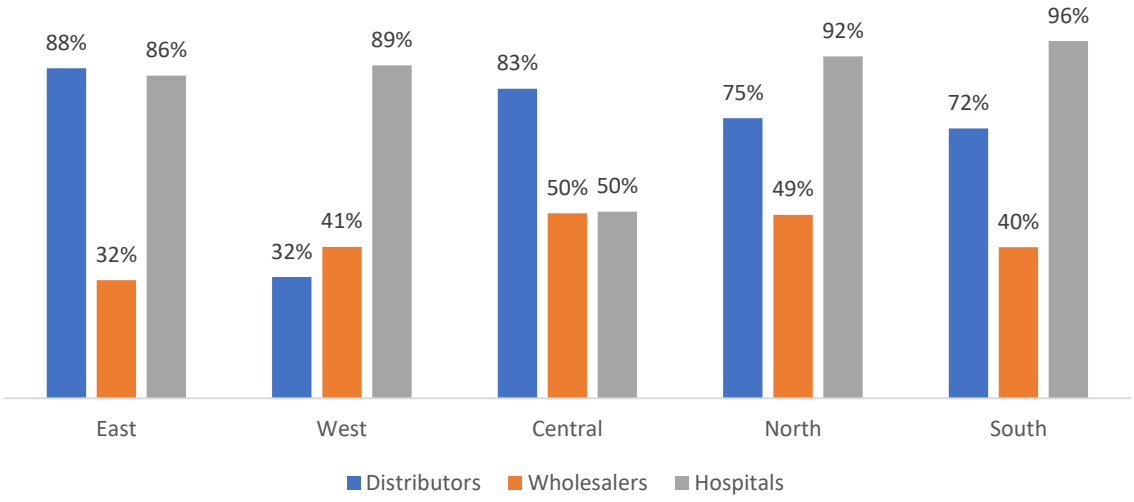


FIGURE 121: REGION WISE CHANGE IN PRICE FOR KNEE IMPLANTS

The provided data illustrates the percentage of respondents who observed an increase in costs post-notification of fixation of ceiling prices on knee implants across different stakeholders and regions. Analysing the trends in increased costs provides insights into how the fixation of ceiling prices policy has influenced the cost dynamics and the associated implications for stakeholders.

In the Eastern region, a significant majority of respondents across all stakeholder categories witnessed an increase in costs, with 86% of hospitals. This suggests that the fixation of ceiling prices has likely prompted certain cost adjustments within the supply chain, possibly due to manufacturers and distributors adapting to the new pricing structure.

In the Western region, while the percentage of respondents reporting an increase in costs varies across stakeholder categories, 89% of hospital pharmacies witnessed. This indicates that despite efforts to regulate prices, certain cost factors may still be impacting the overall cost of knee implants in the Western region.

Moving to the Central region, a high percentage of respondents across all stakeholder categories reported increased costs, with 50% of respondents for both hospitals and distributors. This suggests that despite the fixation of ceiling prices, there may be challenges in controlling costs within the Central region, possibly due to factors such as supply chain dynamics or operational expenses.

In the Northern region, 92% of hospital pharmacies witnessed the highest increase in costs, indicating significant cost adjustments post-notification of ceiling prices fixation. This suggests that there may have been efforts to recalibrate pricing structures and manage costs in response to the policy implementation.

In the Southern region, 96% of hospital pharmacies witnessed the highest increase in costs, indicating substantial adjustments in cost dynamics following the fixation of ceiling prices. This underscores the significant impact of the policy on cost management within the Southern region's healthcare infrastructure.

In conclusion, the fixation of ceiling prices policy on knee implants aims to regulate costs and ensure affordability and accessibility for patients. While the data indicates varying degrees of cost adjustments across different regions and stakeholders, the overall trend suggests that the policy has prompted stakeholders to reassess their cost structures and make necessary adjustments.

By fixing ceiling prices, the policy aims to mitigate excessive cost burdens on patients and healthcare providers, ultimately improving healthcare affordability and accessibility. The observed increase in costs reported by stakeholders underscores the complexities involved in implementing such policies and highlights the ongoing challenges in aligning cost dynamics with the policy objectives.

Continued monitoring and evaluation of the policy's impact on costs will be essential to ensure its effectiveness and alignment with its objectives across different regions and stakeholder groups. Adjustments may be necessary to address any unintended consequences and ensure that the fixation of ceiling prices policy continues to benefit patients and healthcare systems alike.

7.8.5 Change in Quality for Knee Implants

The provided data illustrates the changes in the quality of knee implants post-COVID, segmented into different regions and supply channels including wholesalers, distributors, standalone pharmacies, Hospital Pharmacies, and manufacturers.

In the context of knee implant devices, hospitals have the most significant influence on the increase in quality, with an overall 45% of respondents. 2% of Manufacturers also witnessed a role in quality

improvement, Overall, the quality of knee implant devices has improved post-2021, with hospitals being the key driver of this change.

In the value chain for knee implant devices, manufacturers are responsible for producing high-quality devices that meet safety and efficacy standards. Hospitals, as end-users, play a crucial role in maintaining and improving the quality of knee implant procedures through skilled surgeons, state-of-the-art facilities, and quality assurance practices. Manufacturers and hospitals collaborate to ensure that patients receive the best possible care and outcomes when undergoing knee implant surgeries.

The Central region, 41% of hospital pharmacies exhibits the highest increase in quality for knee implant devices. Hospital pharmacies in this region are the main contributors to this improvement, suggesting that healthcare facilities in the Central region have taken steps to enhance the quality of knee implant procedures and devices.

In the North region,39% of hospital pharmacies witnessed that there is an overall increase in quality, Manufacturers also contribute to quality improvement, indicating that the region has seen advancements in the quality of knee implant devices.

The West region, 51% of hospital pharmacies witnessed an increase in quality and Manufacturers also witnessed a less increase in quality, indicating that the West region also has made a considerable stride in improving the quality of knee implant procedures and devices.

The Southern region, 49% of hospital pharmacies witnessed an increase in quality. Manufacturers also witnessed to quality improvement, suggesting that both stakeholders have been actively involved in enhancing knee implant quality in the region.

The East region, 45% of hospital pharmacies witnessed an increase in quality. Manufacturers also contribute positively to quality improvement, indicating that the East region has made efforts to provide better quality knee implant devices and procedures.

In essence, the fixation of ceiling prices policy on knee implants endeavours to uphold quality standards while ensuring affordability and accessibility for patients. Although the data reflects varied adjustments in costs across regions and stakeholders, the overarching aim is to prompt stakeholders to scrutinize and refine their quality standards in response to the policy. Through fixing ceiling prices, the policy seeks to alleviate excessive financial burdens on patients and healthcare providers, ultimately fostering an environment where high-quality knee implants remain accessible.

8 Consumers

Consumers were asked about aspects such as the affordability, quality, availability, and average prices of medical devices. Below is an analysis of their responses to these inquiries.

8.1 Quality

The presented data outlines the perceived quality of different medical devices by consumers.

Overall Comparison - Pre-COVID vs. Post-COVID:

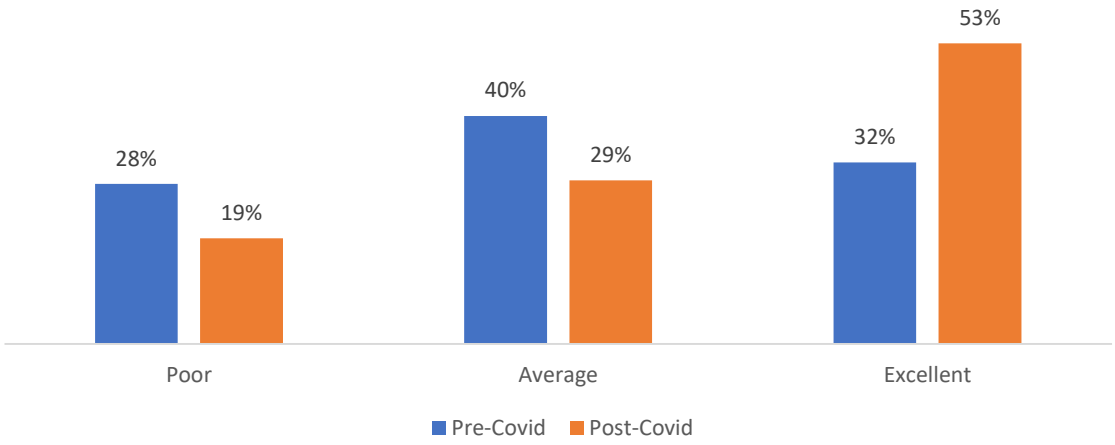


FIGURE 122: OVERALL COMPARISON OF MEDICAL DEVICES PRE-COVID VS POST-COVID

In the pre-COVID landscape, perceptions about the overall quality of medical devices among consumers were quite diverse. A significant 40% of respondents witnessed that these devices as average, while 32% of respondents witnessed them excellent. However, there was a notable 28% of respondents who regarded the quality as poor.

In the post-COVID scenario, there is a remarkable positive shift in these perceptions. The number of consumers rating medical devices as excellent surged from 32% to an impressive 53% of respondents. Simultaneously, those considering the quality as poor decreased significantly from 28% to 19% of respondents. Moreover, the percentage of individuals perceiving the devices as average also dropped from 40% to 29% of respondents.

The findings suggest a positive impact of the notifications on TMR and on the fixation of the ceiling prices for the medical devices by NPPA, aligning with its goal to improve & maintain affordability.

Comparing the pre-COVID and post-COVID data, there is a noticeable positive trend. The increase in those perceiving medical devices as excellent showcases a substantial improvement in their quality. This shift could be attributed to technological advancements, increased innovation, or enhanced quality control measures, especially considering the challenges posed by the pandemic.

In essence, pre-COVID times displayed a varied perspective on the quality of medical devices, with a substantial portion finding them average. However, the post-COVID scenario illustrates a markedly more favourable view, with a higher percentage of consumers recognizing these devices as excellent. This not only highlights the adaptability of the industry but also points towards enhanced quality and potentially improved affordability, showcasing the positive evolution in the medical device landscape in response to the evolving needs during and post-pandemic times.

Comparison of Rural Areas Medical Device Quality: Pre and Post COVID

The comparison between pre-COVID and post-COVID perceptions of medical device quality in rural areas presents an encouraging shift. It is remarkable to note that there has been a significant improvement in the post-COVID era, especially regarding consumer perceptions of excellent quality devices, which has risen from 31% to an impressive 50% of respondents. This suggests advancements in both affordability and quality, as more consumers now perceive the devices they use as being of superior standards.

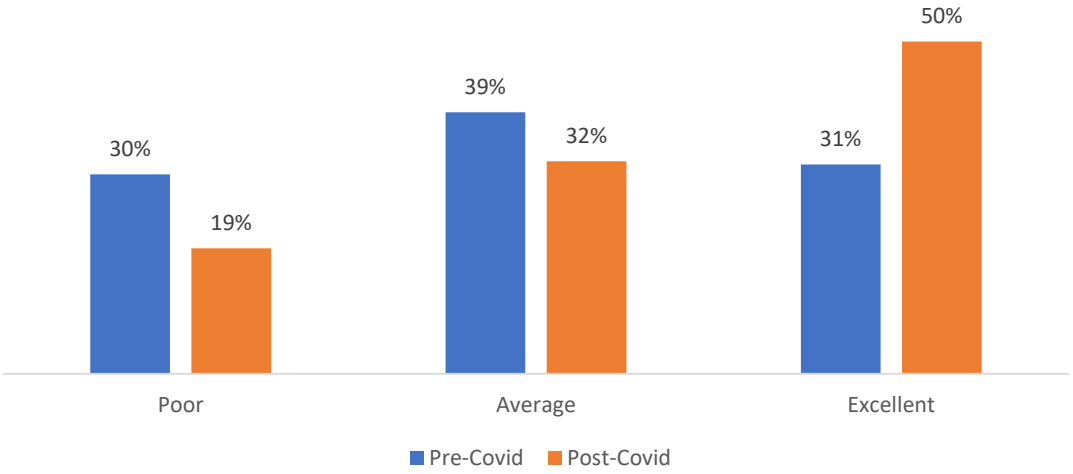


FIGURE 123: RURAL AREAS MEDICAL DEVICE QUALITY: PRE AND POST COVID

Moreover, the decrease in the percentage of consumers categorizing medical devices as poor (from 30% of respondents pre-COVID to 19% of respondents post-COVID) reflects a positive trend in enhancing the accessibility of better-quality devices in rural areas. The rise in the perception of devices being average (from 39% of respondents to 32% of respondents) could indicate a transition phase where there is still room for improvement in delivering consistently high-quality medical devices across all areas.

The results indicate a favourable outcome of the notifications regarding Trade Margin Rationalization (TMR) and the fixation of ceiling prices for medical devices by NPPA, in line with the objective to enhance and sustain affordability.

The substantial increase in the perception of excellent quality post-COVID signals that efforts to improve medical device quality and affordability have borne fruit. However, there remains an opportunity to bridge the gap further between average and excellent perceptions. This could involve initiatives such as increased awareness campaigns, ensuring better distribution channels, or incentivizing the production of higher-quality, affordable medical devices.

Overall, this data paints an optimistic picture of progress in providing rural consumers with more accessible, higher-quality medical devices post-COVID. Continuing on this trajectory by focusing on maintaining affordability while consistently enhancing device quality can greatly benefit rural healthcare, ensuring that more individuals have access to reliable and top-notch medical technology.

Comparison of Urban Areas Medical Device Quality: Pre and Post COVID

The comparison of consumer perceptions regarding the overall quality of medical devices in urban areas before and after COVID-19 reveals a nuanced shift in sentiment. While there has been a notable increase in the percentage of consumers categorizing the post-COVID medical device quality as poor

(from 18% of respondents to 27% of respondents), it is important to focus on the positive aspects of the data. The rise in the perception of average quality devices is substantial, climbing from 27% of respondents witnessed in pre-COVID to 41% of respondents witnessed in post-COVID, indicating an improvement in the overall standard of medical devices.

In addition, the most significant shift is in the "Excellent" category, which has experienced a decrease from 55% of respondents witnessed in pre-COVID to 32% of respondents witnessed in post-COVID. This shift suggests a recalibration in consumer expectations, possibly influenced by evolving technological standards or increased awareness of what constitutes an excellent medical device. It is crucial to recognize this change not as a decline in quality but as an opportunity for manufacturers to align their products with the evolving needs and expectations of urban consumers.

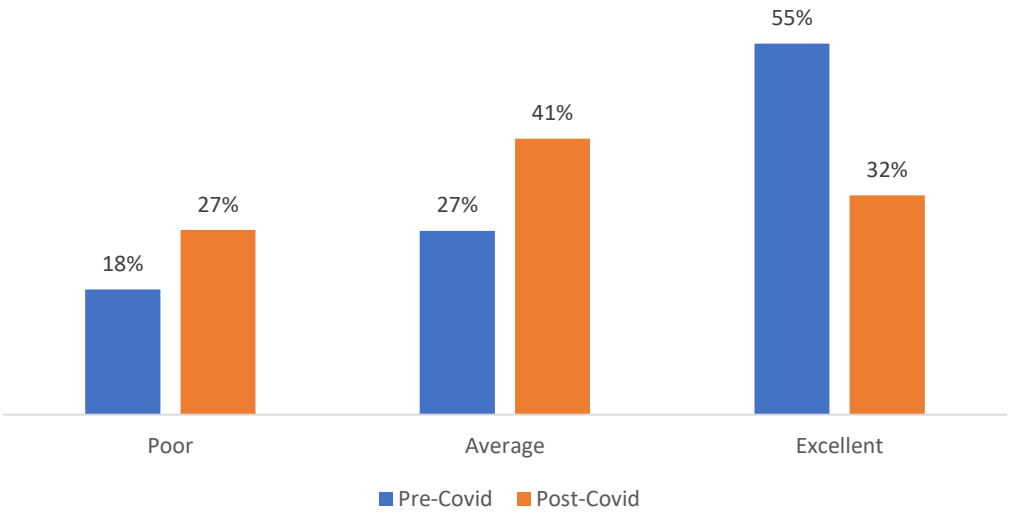


FIGURE 124: URBAN AREAS MEDICAL DEVICE QUALITY: PRE AND POST COVID

To further enhance the positive trends seen in the data, stakeholders in the medical device industry may consider conducting consumer awareness campaigns to educate urban populations about the advancements in medical technology and how these improvements contribute to the overall quality of healthcare. Additionally, investing in research and development to innovate and meet the changing demands of urban consumers can contribute to maintaining and even surpassing the high standards set pre-COVID.

In summary, the data reflects a dynamic landscape in urban areas, with a notable increase in the perception of average quality medical devices. This presents an opportunity for the industry to respond proactively by adapting to evolving consumer expectations, ensuring that the quality of medical devices aligns with the advancements in technology and healthcare standards.

8.2 Availability

The presented data outlines the availability of different medical devices as consumers perceive them.

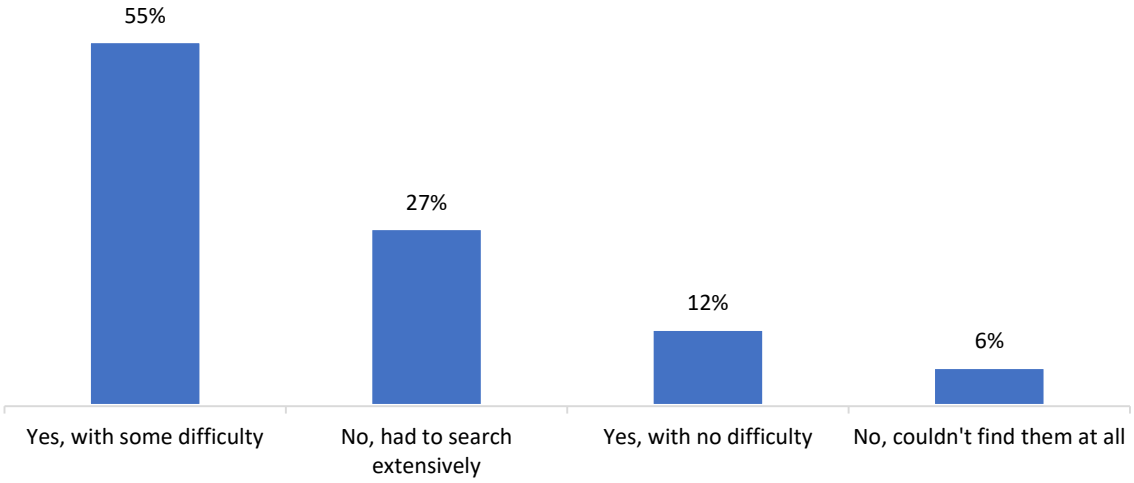


FIGURE 125: AVAILABILITY TO FIND AND PURCHASE DURING THE COVID-19 PANDEMIC

This chart focuses on the availability and accessibility of medical devices during the COVID-19 pandemic, as indicated by survey data. It was found that a majority, constituting 55% of the participants, encountered some level of difficulty when trying to find and purchase these essential medical devices, indicating widespread challenges in accessing them. Conversely, a mere 12% of the respondents witnessed a hassle-free experience in acquiring medical devices, signifying that only a minority enjoyed seamless accessibility. A substantial portion, approximately 27% of the surveyed individuals, had to engage in extensive searches to locate and purchase the necessary medical devices, underscoring the prevalence of accessibility issues. Furthermore, a noteworthy 6% of the respondents shared the alarming experience of not being able to find medical devices at all during the pandemic, emphasizing the significant hardships faced by this smaller yet notable group in obtaining these vital products.

In summary, a majority of respondents faced some level of difficulty in finding and purchasing medical devices during the COVID-19 pandemic, with a substantial portion having to search extensively. This underscores the challenges individuals encountered in accessing these critical items during a public health crisis.

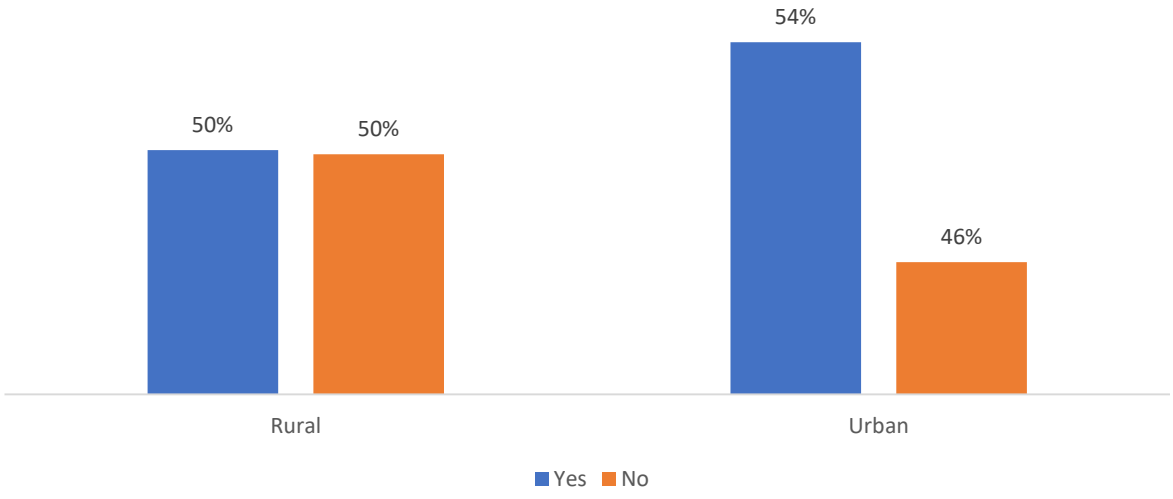


FIGURE 126: AREA WISE TMR NOTIFICATION AFFECT THE AVAILABILITY OF THE MEDICAL DEVICES

This chart examines the impact of TMR (Technology, Media, and Telecom Regulatory) notifications on the availability of medical devices in both rural and urban areas. The data indicates whether respondents believe that TMR notifications affected the availability of medical devices, with responses categorized as "Yes" or "No." Here are the key findings:

Rural Areas:

- **Yes (TMR Notification Impact):** 53% of respondents in rural areas believe that TMR notifications affected the availability of medical devices, while 47% think otherwise.
- **No (TMR Notification No Impact):** 47% of respondents in rural areas do not believe that TMR notifications affected medical device availability.

Urban Areas:

- **Yes (TMR Notification Impact):** 50% of respondents in urban areas believe that TMR notifications affected the availability of medical devices, while 50% think otherwise.
- **No (TMR Notification No Impact):** 50% of respondents in urban areas do not believe that TMR notifications affected medical device availability.

Analysis:

- **Rural Areas:** A majority of respondents in rural areas (53%) believe that TMR notifications impacted the availability of medical devices. This suggests that these notifications may have had a discernible impact on medical device availability in rural regions, with half of the respondents disagreeing.
- **Urban Areas:** In urban areas, respondents are divided evenly on whether TMR notifications had an impact on medical device availability, with 50% perceiving an impact and 50% disagreeing.

The data indicates varying perceptions regarding the impact of TMR notifications on medical device availability in both rural and urban areas. In rural regions, a majority believes that TMR notifications affected availability, while urban respondents are evenly split on the issue. Further analysis and research may be required to understand the specific nature and implications of these perceptions and their correlation with actual medical device availability.

8.3 Affordability

The presented data outlines the spending patterns of consumers across different income brackets on medical devices, showcasing the percentage of income allocated to these healthcare expenses.

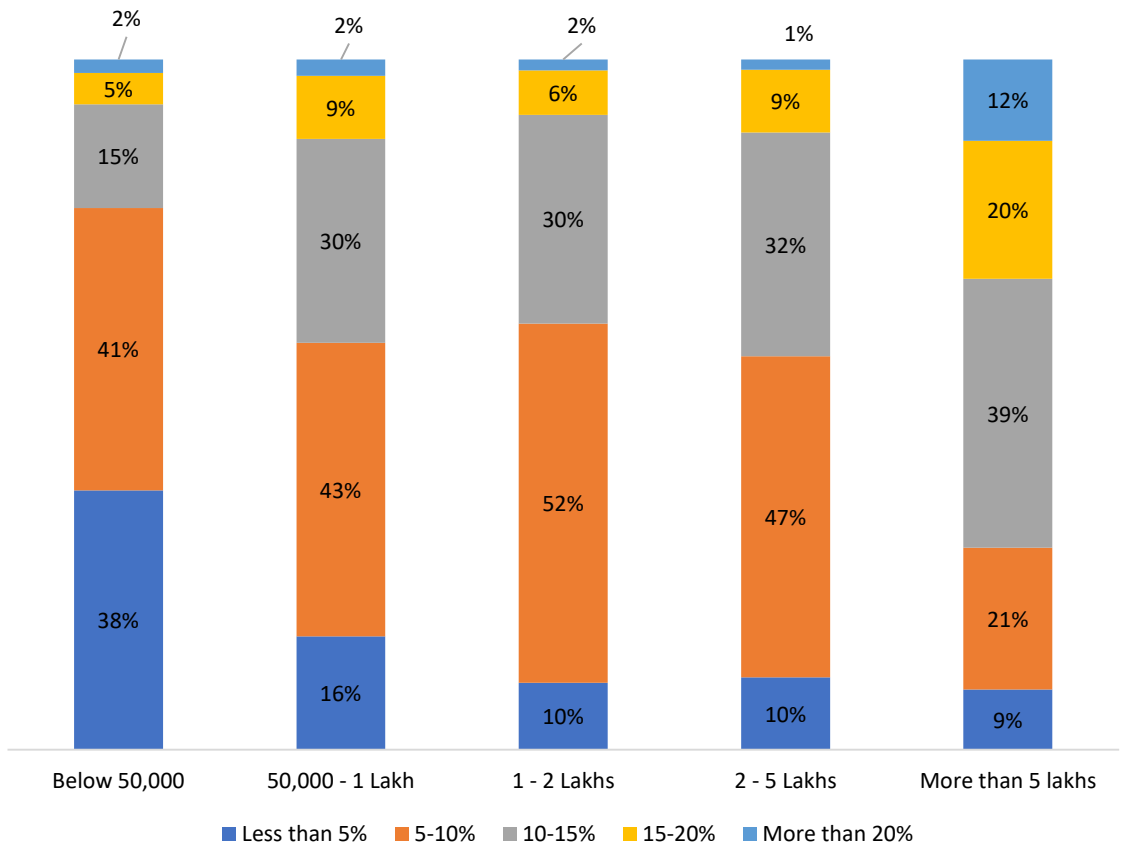


FIGURE 127: CONSUMERS INCOME RANGES AND SPENDING PATTERNS ON MEDICAL DEVICES

The data on consumer spending patterns regarding medical devices across income levels provides valuable insights into how different segments allocate their income for healthcare needs.

Below Rs. 50,000 Income Level

The majority (38%) in this income bracket spend less than 5% of their income on medical devices, indicating a conservative approach to healthcare spending. However, a significant portion (41%) allocates 5-10% of their income, showcasing a willingness to invest more in medical necessities despite financial constraints.

Rs. 50,000 – 100,000 Income Level

Here, a significant portion (43%) spends 5-10% of their income on medical devices, demonstrating a higher propensity to allocate a moderate portion of their earnings to healthcare. This group seems more willing to prioritize health expenditures over other discretionary expenses.

Rs. 100,000 – 200,000 Income Level

This bracket shows a substantial shift, with over half (52%) spending 5-10% of their income on medical devices. This suggests a trend of increased healthcare prioritization as income rises within this segment.

Rs. 200,000 – 500,000 Income Level

Similar to the previous bracket, a significant portion (47%) here allocates 5-10% of their income towards medical devices. This could indicate a consistent pattern in this income range regarding healthcare spending despite a higher overall income.

More than Rs. 500,000 Income Level

The percentage of individuals spending 5-10% drops to 21%, suggesting a different approach to healthcare spending in this higher income bracket. There is a notable decrease in the proportion of individuals allocating a moderate percentage of their income towards medical devices.

Vulnerable Sections

Across all income levels, those earning below 100,000 seem to allocate a higher proportion of their income to medical devices, signifying a higher vulnerability to healthcare expenses. The data highlights that individuals with lower incomes tend to spend a more significant portion of their earnings on healthcare necessities.

In general, the data showcases that as income levels rise, the percentage of income spent on medical devices decreases. However, this isn't a linear relationship, as seen in the shift among the more affluent group where a smaller proportion spends moderately compared to the income levels just below. This might indicate a shift in priorities or access to better healthcare coverage among those with higher incomes.

Understanding these spending patterns can help in tailoring healthcare policies and financial assistance programs targeted at vulnerable sections. It is evident that healthcare affordability remains a concern for lower-income groups, necessitating targeted interventions to ensure access to essential medical devices without imposing an excessive financial burden.

8.4 Average Prices of Medical Devices

The presented data outlines the average prices of the medical devices as indicated by the consumers.

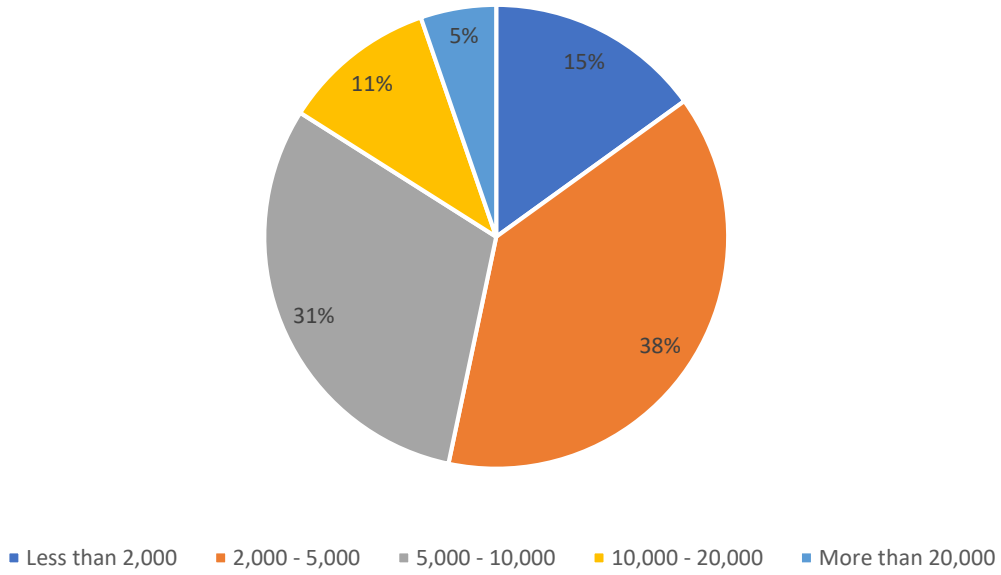


FIGURE 128: AVERAGE PRICE OF CONSUMER'S MEDICAL DEVICES

This chart assesses the affordability of medical devices based on the average prices reported by respondents. The data reveals the distribution of individuals' responses regarding the average price range of medical devices. Here are the key findings:

The majority, comprising 38% of respondents, indicated that the average price range for these devices falls within the range of Rs. 2,000 to Rs. 5,000, suggesting that a significant portion of medical devices is moderately affordable. Approximately 15% of the participants reported that the average cost of medical devices is less than Rs. 2,000. Furthermore, 31% of respondents reported an average price range between Rs. 5,000 and Rs. 10,000 for medical devices, indicating that a substantial number of these devices fall within the mid-price range. Additionally, 11% of participants mentioned that the average price range of medical devices lies between Rs. 10,000 and Rs. 20,000. Lastly, 5% of respondents highlighted that the average price of medical devices exceeds Rs. 20,000. These findings collectively provide insights into the perceived affordability levels of medical devices among the surveyed individuals.

The data reflects a diverse range of average prices for medical devices. The majority of respondents indicated that medical devices typically fall in the Rs. 2,000 to Rs. 5,000 price range, suggesting that many medical devices are moderately affordable. However, significant portions of the population also reported higher price ranges, indicating that some medical devices may be relatively expensive.

9 Conclusion

The Drugs (Price Control) Order, 2013 notification has had a significant impact on the availability and affordability of essential medical devices for consumers, standalone pharmacies, and hospital pharmacies. There is notable improvement in accessibility in rural areas and the effects vary across different geographical regions. The affordability of devices used by consumers has improved, with a reduction in out-of-pocket expenses post the (DPCO, 2013) notification, particularly for essential medical devices such as pulse oximeters, digital thermometers, and BP monitors.

Since its implementation, there has been a notable uptick in manufacturers altering their supply chains. Despite occasional disruptions in the supply chain, there has been a considerable overall increase in the availability of medical devices across the country. Among all medical devices, nebulizers, cardiac stents, and oxygen concentrators have shown the highest increase in supply across different regions of the country, particularly in terms of their manufacturing.

The reduced prices of medical devices led to an increased demand, enhancing both availability and affordability for consumers. Oxygen concentrators, in particular, exhibit higher demand across various regions compared to other medical devices in the country. Manufacturers and importers experience a greater demand for these devices compared to other stakeholders in the industry.

There have been price adjustments across all medical devices, with nebulizers reduced by 39%, digital thermometers by 32% and pulse oximeters and glucometers by 21%. These reductions in prices were significant and involved establishing ceiling prices for all medical devices.

There has been a substantial surge in the sales of these medical devices. This decrease in prices has made these devices more affordable for consumers, consequently improving their availability. Additionally, both standalone pharmacies and hospital pharmacies have witnessed enhanced sales post-COVID.

The domestic market value of these medical devices amounts to approximately 2 USD Billion, showcasing a positive impact on the sustainability of the medical device industry within the market.

The TMR notification raised awareness among distributors, wholesalers, standalone pharmacies, and hospital pharmacies, but manufacturers had relatively less awareness of it. However, this notification led to price regulations, affecting the pricing structure from manufacturers to wholesalers and eventually to consumers through retailers. The demand for price is based on the consumption pattern. As demand increased, with the end consumer price remaining constant, there was a squeeze in margins in the distribution network for the manufacturers, distributors, wholesalers, and retailers.

Also, Wholesalers have emerged as key players in the industry, experiencing a positive increase in profitability and availability of medical devices. Distributors, despite facing some supply chain disruptions, have also witnessed a positive surge in supply post-COVID. Also, the TMR strategy adopted across business segments has generated positive outcomes, influencing the availability and affordability of medical devices following the (DPCO, 2013) notification.

Glucometer

Post-TMR, the landscape for glucometer availability and affordability has seen significant shifts across different distribution channels. While there has been a commendable increase in supply, especially from manufacturers and distributors, pointing towards a proactive response to heightened demand, the rise in costs, particularly led by distributors, raises concern about affordability. This cost surge could potentially hinder the accessibility of glucometers to consumers, impacting their ability to procure

these vital medical devices at competitive and affordable rates. Despite the increased supply and sales, the pivotal role of wholesalers in meeting demand underscores their potential to streamline availability and affordability. However, the notable improvements in quality, especially within hospital pharmacies, signify a prioritization of reliability and accuracy, ensuring that the devices accessible to consumers are of higher standards.

In essence, while there's been a substantial effort to bolster supply and meet increased demand for glucometers post-TMR, the rise in prices, especially driven by distributors, poses a significant challenge to the affordability of these medical devices. It highlights a potential need for strategies aimed at balancing increased availability with maintaining competitive pricing, ensuring that these crucial devices remain accessible to a broader consumer base.

In terms of regional distribution, the East region of the country, closely followed by the Central region, has witnessed a higher increase in the supply of glucometer devices compared to other regions. Correspondingly, the demand for glucometers has surged, leading to increased sales. However, sales figures vary among stakeholders, including manufacturers, distributors, standalone pharmacies, and hospital pharmacies & importers.

Moreover, improvements in both price and quality of medical devices have been observed across all regions, with the East and Central regions experiencing more significant enhancements in quality and price adjustments.

Pulse Oximeter

Post-TMR, the landscape for pulse oximeter availability has seen a commendable upsurge across various Stakeholders, primarily spearheaded by distributors who have significantly increased both supply and demand. Manufacturers have also played a pivotal role, marking a substantial rise in supply and sales, reflecting their proactive response to meeting amplified market needs. This surge in availability, especially from distributors and manufacturers, indicates a concerted effort to ensure these critical medical devices are widely accessible in response to heightened demand, potentially ensuring a broader reach for consumers seeking these vital healthcare tools.

Additionally, the noteworthy improvements in quality, particularly led by Hospital pharmacies, signify a commitment to enhancing accuracy and reliability. This shift towards better quality standards reflects a positive trend in ensuring that the pulse oximeters accessible to consumers are of higher standards, potentially offering more accurate readings and better performance. While the surge in costs, especially from distributors, raises concerns about affordability, the overall positive strides in availability and notably improved quality suggest a proactive response from various Stakeholders in meeting the amplified demand for pulse oximeters, thereby ensuring broader accessibility for consumers in need of these crucial medical devices.

Regionally, the Southern and East regions of the country exhibit higher supply compared to other areas, contributing to improved demand for medical devices. Post-TMR, there's also been an uptick in demand in the West region. The Southern region stands out for its notable sales figures, substantial cost reductions, and enhancements in the quality of medical devices.

Digital Thermometer

Post-TMR, the surge in supply and demand for digital thermometers across various Stakeholders, notably driven by distributors and manufacturers, reflects a proactive approach in ensuring heightened availability of these crucial healthcare devices. Distributors, in particular, have played a pivotal role in significantly increasing both supply and demand, showcasing their agility in meeting amplified market

requirements. This surge in availability suggests a concerted effort by distributors and manufacturers to respond to the increased need for digital thermometers, potentially ensuring a wider accessibility for consumers seeking these essential medical tools.

Moreover, the notable improvements in quality, especially led by Hospital pharmacies, signify a positive trend towards enhancing accuracy and reliability in digital thermometers. This commitment to elevating standards indicates a collective effort within healthcare Stakeholders to provide more accurate and reliable devices for patient care. While the surge in costs, primarily observed among distributors, raises concerns about affordability, the overall positive strides in availability and notably improved quality indicate a proactive response from various Stakeholders in meeting the amplified demand for digital thermometers, potentially ensuring broader accessibility for consumers seeking these critical medical devices.

Regionally, the South and East regions of the country showcase higher supply of digital thermometers, with the South region exhibiting major demand. Sales have been particularly significant in the East, closely followed by the South. In addition, the West region stands out for marked improvements in the quality of these devices.

Oxygen Concentrator

Post-TMR, the surge in availability of oxygen concentrators across various Stakeholders, notably driven by wholesalers and distributors, showcases a proactive response to meet heightened demand. Wholesalers have particularly demonstrated a remarkable increase in supply, marking them as crucial contributors to the increased availability of these critical medical devices. Their proactive approach suggests an active response to ensure accessibility and availability, potentially contributing to more competitive pricing and better accessibility for consumers seeking these vital healthcare tools. Moreover, distributors have shown agility in meeting amplified demand, emerging as primary drivers in ensuring these devices are accessible across various Stakeholders, showcasing a commendable effort in streamlining availability and responsiveness to market needs.

Additionally, the discernible improvements in quality, especially led by Hospital pharmacies, signify a positive advancement in reliability and effectiveness. Hospital settings have shown a remarkable commitment to enhancing the quality of oxygen concentrators, ensuring better performance and reliability in critical healthcare scenarios. This improvement in quality suggests a proactive approach within healthcare Stakeholders to offer more reliable devices, potentially leading to improved patient outcomes. While the surge in costs, particularly from distributors, raises concerns about affordability, the overall positive strides in availability and notably improved quality indicate a proactive response from various Stakeholders in ensuring broader accessibility for consumers seeking these crucial medical devices in the post-TMR landscape.

Regionally, there are notable shifts in demand and sales of oxygen concentrators, particularly in the South and East regions of the country. These areas demonstrate higher demand and sales compared to other regions, indicating increased availability of these medical devices for consumers in those specific areas.

BP Monitor

Post-TMR, the substantial increase in the supply and demand for BP Monitors, primarily driven by manufacturers and distributors, showcases a commendable effort to ensure heightened availability of these essential medical devices. Distributors, especially, have played a pivotal role in significantly boosting both supply and demand, highlighting their proactive approach in meeting amplified market

requirements. This surge in availability suggests an active response from distributors and manufacturers, potentially ensuring broader accessibility and possibly more competitive pricing for consumers seeking these vital healthcare tools.

Furthermore, the noticeable enhancements in quality, particularly led by Hospital pharmacies, signify a positive stride towards accuracy and reliability in BP Monitors. Hospitals have shown a remarkable commitment to enhancing the quality of these devices, emphasizing a focused effort to provide more reliable tools for patient care. This improvement indicates a collective push within healthcare Stakeholders to offer more accurate devices, potentially leading to enhanced patient care outcomes. While the surge in costs, notably from distributors, raises concerns about affordability, the overall positive strides in availability and notably improved quality indicate a proactive response from various Stakeholders in ensuring broader accessibility for consumers seeking these crucial medical devices in the post-TMR landscape.

In terms of regional trends, the Central and East regions of the country exhibit higher demand and sales for BP Monitors. Additionally, these regions have shown improvements in the quality of these devices compared to others.

Nebulizer

Post-TMR, the surge in availability of Nebulizers, particularly driven by distributors and manufacturers, reflects a commendable effort to ensure increased accessibility of these crucial medical devices. Distributors, especially, have significantly boosted both supply and demand, indicating a proactive approach in meeting amplified market requirements. Their surge in supply and demand suggests a responsiveness to the increased need, potentially leading to improved availability and possibly more competitive pricing for consumers seeking Nebulizers.

Moreover, the noticeable enhancements in quality, particularly led by Hospital pharmacies, signify a positive advancement towards reliability and effectiveness in Nebulizers. Hospitals have demonstrated a notable commitment to enhancing the quality of these devices, emphasizing a focused effort to provide more reliable tools for patient care. This improvement indicates a collective push within healthcare Stakeholders to offer more accurate devices, potentially leading to enhanced patient care outcomes. Despite the surge in costs, particularly from Hospital pharmacies, potentially impacting affordability, the overall positive strides in availability and improved quality indicate a proactive response from various Stakeholders in ensuring broader accessibility for consumers seeking these critical medical devices in the post-COVID landscape.

Regarding nebulizers, the East and West regions of the country demonstrate higher demand and sales, ultimately providing greater availability and affordability for consumers in these areas.

Cardiac Stents

Post notification for fixation on ceiling of prices for cardiac stents, the substantial surge in both supply and demand for Cardiac Stents, particularly driven by distributors and manufacturers, reflects a proactive effort to ensure heightened availability of these critical medical devices. Distributors have notably played a pivotal role in significantly boosting both supply and demand, showcasing a proactive approach in meeting amplified market requirements. Their surge in supply and demand indicates a responsiveness to the increased need, potentially leading to improved availability and possibly more competitive pricing for consumers seeking Cardiac Stents.

Moreover, the noticeable enhancements in quality, especially led by Hospital pharmacies, signify a positive advancement towards reliability and effectiveness in Cardiac Stents. Hospitals have shown a

remarkable commitment to enhancing the quality of these devices, emphasizing a focused effort to provide more reliable tools for patient care. This improvement indicates a collective push within healthcare Stakeholders to offer more accurate devices, potentially leading to enhanced patient care outcomes. Despite the surge in costs, particularly from Hospital pharmacies, potentially impacting affordability, the overall positive strides in availability and improved quality indicate a proactive response from various Stakeholders in ensuring broader accessibility for consumers seeking these crucial medical devices in the post-fixation on ceiling prices of cardiac stents.

Regarding cardiac stents, the southern regions of the country demonstrate higher demand and sales, ultimately providing greater availability and affordability for consumers in these areas.

Knee Implants

In the post notification for fixation on ceiling prices for knee implants, the data indicates a positive trend in the availability and responsiveness of the supply chain for knee implants across various Stakeholders. Distributors, in particular, have played a pivotal role, showcasing a substantial surge in both supply and demand. This proactive approach by distributors suggests an efficient response to the increased market requirements, potentially ensuring better availability and accessibility of knee implants for consumers. Manufacturers, too, have demonstrated agility in meeting the heightened demand, reflecting a positive stride towards improved availability of these critical medical devices. The notable rise within these key stakeholders highlights a collective effort to contribute to better accessibility for consumers seeking knee implants, potentially paving the way for more competitive pricing.

Moreover, the improvement in the quality of knee implants, notably led by Hospital pharmacies, indicates a positive shift towards enhancing the reliability and effectiveness of these essential medical devices. The considerable surge in quality within hospital settings suggests a dedicated effort to elevate standards, potentially leading to better patient outcomes. While the increase in costs, particularly from Hospital pharmacies, may pose concerns for affordability, the overall positive strides in availability and improved quality underscore a proactive response from various Stakeholders. This collective effort suggests a positive trajectory in ensuring broader accessibility and potentially more competitive pricing for consumers in need of knee implants in the post notification for fixation on ceiling prices for knee implants.

Regarding knee implants, the southern regions of the country demonstrate higher demand and sales, ultimately providing greater availability and affordability for consumers in these areas.

Consumers Perceptive

Post-COVID provide a positive outlook on both affordability and quality perception, with notable considerations for availability. Affordability, particularly in relation to income brackets, showcases a conscientious commitment to healthcare expenditures. Despite lower-income groups allocating a substantial portion of their income (5-10%) to medical devices, this suggests an increased prioritization of health expenses, emphasizing the critical role these devices play in post-pandemic healthcare. The decline in spending among higher-income groups might be attributed to their access to comprehensive healthcare services, reflecting an encouraging trend where affordability challenges are mitigated by broader healthcare coverage. This understanding of spending patterns across income groups suggests a positive correlation between income and commitment to medical expenses, contributing to improved accessibility for consumers seeking knee implants.

Post COVID, consumers have noted an improvement in the quality of medical devices, especially in rural areas where availability has increased. Post-pandemic, there's a general perception of decreased prices for essential medical equipment. Regardless of income, most individuals spend around 5-10% of their income on these medical devices. Those earning below 50,000 spend less than 5% of their income on these devices, while the bracket of 50,000 to 100,000 spends between 5-10%.

Furthermore, the shift in quality perception post-COVID reveals a positive trend with a significant increase in the percentage of consumers considering medical devices as excellent. This suggests a notable improvement in consumer satisfaction, highlighting potential advancements in device quality. The positive sentiment around device quality is crucial as it not only enhances consumer confidence but also indicates a positive response from the medical device industry to meet the evolving healthcare demands post-pandemic. Additionally, the insights on availability challenges during the COVID-19 period and the perceived impact of regulations on availability underscore the importance of continued efforts to streamline and improve access to medical devices. Overall, this portrays a landscape where consumer commitment to healthcare expenses, coupled with positive shifts in quality perceptions, contributes to an optimistic outlook for both the availability and affordability of knee implants in the post-COVID era.

10 Recommendations

The notification of the Drugs (Price Control) Order, 2013 has significantly influenced both the industry and consumers in terms of availability and affordability across various regions. The study has ensured coverage in nearly all states, involving multiple stakeholders within the industry. This notification has notably reduced prices, positively impacting accessibility for consumers. However, it has also raised concerns regarding consumers' ability to afford out-of-pocket expenses for these devices. Additionally, it has affected product quality, business profitability, sustainability, and the overall market competition within the industry. Moreover, the TMR notification by NPPA has similarly had a significant impact by improving availability and affordability.

Strengthening the Manufacturing Base:

To fortify the manufacturing base for essential medical devices such as Glucometers, pulse oximeters, BP monitors, digital thermometers, oxygen concentrators, nebulizers, cardiac/coronary stents, and knee implants, it is imperative to incentivize domestic production. This can be achieved through government subsidies, tax breaks, and streamlined regulatory processes to encourage local manufacturers. Additionally, fostering collaborations between academic institutions, research centres, and industry players can enhance innovation and technological advancement in manufacturing processes.

Enhancing the Supplier Framework:

A robust supplier framework is essential for ensuring a steady and reliable supply chain of essential medical devices. Implementing stringent quality control measures and certification standards for suppliers can mitigate risks associated with substandard products. Furthermore, fostering partnerships with reputable suppliers and establishing long-term contracts can promote stability and transparency within the supply chain.

Optimizing Logistics and Distribution:

Efficient logistics and distribution networks are vital for ensuring timely access to essential medical devices across different regions. Investing in infrastructure development, including warehousing facilities and transportation systems, can streamline the distribution process and reduce lead times. Embracing digital technologies such as blockchain and IoT can also enhance traceability and transparency in the logistics chain, reducing the risk of counterfeit products and supply chain disruptions.

Addressing Imbalances in Regional Prices:

To address imbalances in regional prices of essential medical devices, it is crucial to implement a transparent pricing mechanism that takes into account regional disparities in healthcare infrastructure and purchasing power. Leveraging data analytics and market insights can facilitate the formulation of pricing policies that reflect local market dynamics while ensuring affordability and accessibility for patients. Collaborating with healthcare providers and industry stakeholders to monitor price trends and enforce price regulations can help mitigate disparities and promote equitable access to essential medical devices across regions.

Reducing Overall Costs and Distribution Margins:

Lowering overall costs and distribution margins of essential medical devices requires a multi-pronged approach involving regulatory interventions, market incentives, and stakeholder collaboration. Implementing price controls and trade margin rationalization measures, as mandated by the National

Pharmaceutical Pricing Authority (NPPA), can help curb excessive pricing practices and ensure affordability for patients. Additionally, promoting competition among manufacturers and distributors through fair trade practices and anti-monopoly regulations can foster a more competitive market environment, leading to cost efficiencies and reduced distribution margins. Continuous monitoring and evaluation of pricing policies and market dynamics are essential to ensure the sustainability and effectiveness of cost-reduction initiatives in the long term.

Strengthening Distribution Networks of Essential Medical Devices

To enhance the distribution network and address regional imbalances in essential medical devices like pulse oximeters, glucometers, BP monitors, digital thermometers, oxygen concentrators, nebulizers, cardiac stents, and knee implants, a multifaceted approach is vital.

Establishing strategic partnerships between manufacturers, distributors, and local healthcare providers is key. These partnerships can streamline logistics and ensure more efficient distribution channels, especially to underserved regions. Implementing a tiered distribution system can also help. By designating regional hubs that stock these devices and redistributing them to smaller local centres, you can bridge supply gaps and reduce disparities.

To combat supply chain disruptions, diversification is crucial. Developing multiple sourcing options for these devices from different regions or manufacturers can safeguard against disruptions in any one area. Employing technology, such as inventory management systems and predictive analytics, can optimize supply chains, enabling better anticipation of demand surges and preventing shortages. Additionally, investing in infrastructure and training programs in underserved regions can enhance local capacity for device maintenance and support, improving overall accessibility and affordability.

Overall, a collaborative effort involving stakeholders across the supply chain, coupled with technological integration and targeted infrastructure development, can significantly bolster the distribution network, mitigate imbalances, and enhance affordability and availability of these essential medical devices.

Fostering Local Manufacturing: Strategies for Import Substitution in Essential Medical Devices

To foster import substitution and bolster local manufacturing of essential medical devices several strategies can be implemented. Firstly, providing incentives and support through Production-Linked Incentive (PLI) schemes can encourage local manufacturers to invest in research and development. Offering subsidies or tax breaks to companies that focus on producing these devices domestically can stimulate innovation and drive technological advancements, reducing reliance on imports.

Moreover, establishing partnerships between government bodies, research institutions, and local manufacturers can facilitate collaborative efforts in R&D. Providing grants or funding opportunities for research in medical device technology can spur innovation and create an environment conducive to developing high-quality, locally manufactured devices. Additionally, streamlining regulatory processes and offering technical assistance to local manufacturers can expedite the approval and production phases, ensuring a quicker time-to-market for these essential medical devices. By incentivizing local production and investing in R&D, countries can increase the availability of these devices domestically, potentially driving down costs and ensuring a more sustainable and self-reliant healthcare infrastructure.

Ensuring Quality Standards in Essential Medical Devices

Ensuring high-quality standards for essential medical devices like pulse oximeters, glucometers, BP monitors, digital thermometers, oxygen concentrators, nebulizers, cardiac stents, and knee implants is paramount for consumer safety and efficacy. One approach is to advocate for stringent regulatory oversight and compliance with recognized quality standards. Encouraging manufacturers to adhere to internationally recognized quality certifications like ISO standards or FDA approvals can guarantee the devices' reliability and accuracy. Continuous monitoring and evaluation of these devices through rigorous testing and certification processes can maintain consistent quality across the market.

Additionally, fostering innovation in manufacturing techniques and materials can lead to improved quality without compromising affordability. Investing in research and development to enhance device efficiency, accuracy, and durability can result in higher quality products over time. Collaborating with academic institutions or research centres to explore new technologies or materials can drive advancements that improve both quality and cost-effectiveness. Furthermore, establishing quality assurance programs and conducting regular audits within the supply chain can ensure that devices meet stringent quality benchmarks from production to distribution, enhancing consumer trust and confidence in these essential medical devices. Balancing high standards of quality with innovative approaches to production and continuous evaluation will be critical in ensuring that these devices remain both reliable and accessible to consumers.

To Enhance Availability and Affordability of Essential Medical Devices for Consumers

To improve availability and affordability of essential medical devices like pulse oximeters, glucometers, BP monitors, digital thermometers, oxygen concentrators, nebulizers, cardiac stents, and knee implants for consumers, several strategies can be implemented. Encouraging competition among manufacturers through streamlined regulatory processes can foster a more diverse market, leading to lower prices due to increased options for consumers. Moreover, incentivizing research and development in these sectors can drive innovation and potentially lower production costs, making these devices more affordable in the long term.

Introducing subsidy programs or insurance coverage for these devices can significantly reduce the financial burden on consumers. Collaborating with healthcare insurers to include these devices in coverage plans or offering subsidies for their purchase can make them more accessible to a wider demographic. Furthermore, promoting consumer education and awareness about these devices can empower individuals to make informed decisions, leading to increased demand and subsequently driving down prices through economies of scale. Establishing community health programs that provide access to these devices at reduced costs or for free in underserved areas can also address accessibility challenges, ensuring that everyone has access to essential medical equipment when needed.

Standalone and Hospital Pharmacies: Device Availability and Affordability

Firstly, forging partnerships with reliable suppliers or manufacturers can ensure a steady and diverse inventory of these devices. Negotiating favourable terms with suppliers or bulk purchasing can help in securing these devices at competitive prices, enabling pharmacies to offer them to consumers at more affordable rates.

Investing in efficient inventory management systems is crucial. This ensures optimal stock levels and reduces wastage, allowing pharmacies to maintain a consistent supply of devices without overstocking or running out of essential items. Moreover, exploring financing options such as instalment plans or collaborations with insurance providers can alleviate the upfront cost burden for consumers, making

these devices more accessible. Additionally, providing educational materials or workshops within the pharmacy setting can help consumers understand the importance of these devices and how to use them effectively, potentially driving up demand and facilitating better long-term health management.

Ultimately, maintaining a balance between offering competitive prices, ensuring consistent availability, and providing educational support can foster sustainability, profitability, and a competitive edge in the market for pharmacies.

Additional Recommendations on interventions by NPPA:

- Fostering a conducive environment for domestic manufacturing of medical devices is crucial. This can be achieved by offering incentives such as tax breaks, subsidies, and streamlined regulatory processes for manufacturers. Encouraging investment in research and development (R&D) within the country will not only boost indigenous production but also lead to innovation and cost reduction over time.
- Promoting competition in the market can drive down prices and improve accessibility. Implementing policies that facilitate the entry of new players into the market, especially for generic versions of medical devices, can help achieve this goal. Additionally, enforcing strict regulations to prevent anti-competitive practices and monopolies will ensure a level playing field for all stakeholders.
- Investing in healthcare infrastructure and distribution networks is essential to ensure that medical devices reach even the most remote areas. This includes improving transportation networks, establishing warehouses and distribution centers, and leveraging technology for efficient inventory management and tracking.
- Enhancing public-private partnerships can play a significant role in expanding access to medical devices. Collaborations between government agencies, healthcare providers, manufacturers, and non-profit organizations can lead to innovative financing models, bulk procurement schemes, and targeted subsidy programs aimed at making essential medical devices more affordable for consumers.
- Investing in education and awareness campaigns regarding the importance of preventive healthcare and early diagnosis can help reduce the burden on the healthcare system. By promoting regular screenings and self-monitoring using devices such as glucometers, pulse oximeters, and blood pressure monitors, individuals can take proactive steps to manage their health, thereby reducing the need for costly interventions later on.

In addition, addressing the availability and affordability of medical devices requires a multi-faceted approach that encompasses policy reforms, investment in infrastructure and manufacturing capabilities, promotion of competition, and collaboration among stakeholders. By implementing these recommendations, policymakers can work towards ensuring that essential medical devices are accessible to all segments of society, thereby improving healthcare outcomes and quality of life for the population.

11 Annexure

11.1 Sampling

Detailed sampling for all the stakeholders is given below.

State	Consumers	Urban	Rural
Andhra Pradesh	160	128	32
Bihar	130	109	21
Chandigarh	100	50	50
Chhattisgarh	240	188	52
Delhi	240	151	89
Gujarat	100	50	50
Haryana	240	179	61
Jharkhand	100	50	50
Karnataka	190	142	48
Kerala	200	128	72
Madhya Pradesh	180	149	31
Maharashtra	160	81	79
Odisha	180	126	54
Punjab	260	199	61
Rajasthan	280	85	195
Tamil Nadu	160	80	80
Telangana	180	120	60
Uttar Pradesh	250	164	86
Uttarakhand	100	50	50
West Bengal	100	50	50
Total	**3,550**	**2,279**	**1,271**

TABLE 12:STATE WISE SAMPLE DISTRIBUTION FOR CONSUMERS

State	Retailers	Urban	Rural
Andhra Pradesh	90	75	15
Bihar	132	117	15
Chandigarh	103	85	18
Chhattisgarh	123	94	29
Delhi	465	346	119
Gujarat	147	97	50
Haryana	124	111	13
Jharkhand	40	20	20
Karnataka	115	82	33
Kerala	123	98	25
Madhya Pradesh	129	104	25
Maharashtra	145	106	39
Odisha	102	81	21
Punjab	223	189	34
Rajasthan	167	40	127
Tamil Nadu	180	118	62

State	Retailers	Urban	Rural
Telangana	100	76	24
Uttar Pradesh	284	170	114
Uttarakhand	40	20	20
West Bengal	68	51	17
Total	**2,900**	**2,080**	**820**

TABLE 13: STATE WISE SAMPLE DISTRIBUTION FOR RETAILERS (PHARMACIES)

State	Hospitals	Urban	Rural
Andhra Pradesh	80	60	20
Bihar	96	84	12
Chandigarh	45	30	15
Chhattisgarh	126	106	20
Delhi	94	69	25
Gujarat	45	30	15
Haryana	153	122	31
Jharkhand	30	15	15
Karnataka	96	81	15
Kerala	86	66	20
Madhya Pradesh	99	79	20
Maharashtra	101	91	10
Odisha	81	62	19
Punjab	159	141	18
Rajasthan	81	61	20
Tamil Nadu	258	208	50
Telangana	83	62	21
Uttar Pradesh	157	104	53
Uttarakhand	78	58	20
West Bengal	36	26	10
Total	**1,984**	**1,555**	**429**

TABLE 14:STATE WISE SAMPLE DISTRIBUTION FOR HOSPITALS

State	Wholesalers	Distributors	MSME's/Manufacturers	Importers
Andhra Pradesh	10	10	5	-
Bihar	10	12	10	-
Chandigarh	10	10	10	-
Chhattisgarh	10	10	10	-
Delhi	125	30	197	110
Gujarat	10	13	10	10
Haryana	10	10	10	10
Jharkhand	10	10	5	-
Karnataka	10	10	10	-
Kerala	10	10	10	-
Madhya Pradesh	20	35	26	10
Maharashtra	192	15	98	80
Odisha	10	10	10	-

State	Wholesalers	Distributors	MSME's/Manufacturers	Importers
Punjab	10	10	10	-
Rajasthan	16	61	29	10
Tamil Nadu	10	10	10	10
Telangana	10	10	10	10
Uttar Pradesh	68	51	49	50
Uttarakhand	10	10	5	-
West Bengal	10	24	10	10
Total	**571**	**361**	**534**	**310**

TABLE 15: STATE WISE SAMPLE DISTRIBUTION FOR WHOLESALERS, DISTRIBUTORS, MANUFACTURERS, IMPORTERS.

11.2 Questionnaires

11.2.1 Consumers

Demographics:

1. Name of the Consumer:
2. Location/ Address:
3. What is your age group?
    a) Below 20
    b) 20-29
    c) 30-39
    d) 40-49
    e) 50-59
    f) 60 and above
4. What is your gender?
    a) Male
    b) Female
    c) Prefer not to say.
5. What is your household income range?
    a) Below 50,000
    b) 50,000 – 100,000
    c) 100,000 – 200,000 per annum
    d) 200,000 – 500,000
    e) More than 500,000
6. Do you have medical insurance? If yes, does it cover the cost of medical devices?
    a) Yes, it covers all costs.
    b) Yes, but it doesn't cover all the costs.
    c) No, don’t have medical insurance.
7. Are there any specific medical devices that you find particularly unaffordable or expensive?
    a) Cardiac stents
    b) Knee implants
    c) Oxygen concentrators
    d) Pulse oximeters
    e) Glucometers
    f) BP monitors

g) Nebulizers
h) Digital thermometers

8. What measures do you think could be taken to improve the affordability of medical devices for consumers, especially vulnerable sections?
   a) Government subsidies
   b) Price regulations
   c) Insurance coverage expansion
   d) Increased competition among manufacturers
9. What percentage of your annual income do you spend on purchasing medical devices?
   a) Less than 5%
   b) 5-10%
   c) 10-15%
   d) 15-20%
   e) More than 20%
10. How often do you need to replace your medical devices due to wear and tear or obsolescence?
   a) Every 3 months
   b) Every 6 months
   c) Every year
   d) Every 2 years
   e) Every 5 years or more
11. What is the average cost of the medical devices you use?
   a) Less than ₹2,000
   b) ₹2,000 - ₹5,000
   c) ₹5,000 - ₹10,000
   d) ₹10,000 - ₹20,000
   e) More than ₹20,000

Pre - Covid Questions:

1. How many of the listed medical devices did you need on a regular basis prior to COVID-19 pandemic? (Oxygen concentrator, Pulse oximeter, Glucometer, BP monitor, Thermometer and Nebulizer)
   a) None
   b) 1-2
   c) 3-4

d) 5

2. On a scale of 1-5, with 1 being very easy and 5 being very difficult, how would you rate the financial burden of affording these medical devices pre-COVID?
   a) 1
   b) 2
   c) 3
   d) 4
   e) 5
3. How frequently did you use (Medical devices) prior to the COVID-19 pandemic?
   a) Daily
   b) Weekly
   c) Monthly
   d) Rarely
   e) Never
4. How would you rate the overall quality of the (Medical Devices) you used prior to the COVID-19 pandemic?
   a) Very Poor
   b) Poor
   c) Average
   d) Good
   e) Excellent

Post – Covid Questions:

1. How many of the listed medical devices did you or a member of your household use regularly during or after the COVID-19 pandemic? (Oxygen concentrator, Pulse oximeter, Glucometer, BP monitor, Thermometer and Nebulizer)
   a) None
   b) 1-2
   c) 3-4
   d) 5
2. On a scale of 1-5, with 1 being very easy and 5 being very difficult, how would you rate the financial burden of affording these medical devices post-COVID?
   a) 1
   b) 2
   c) 3

d) 4

e) 5

3. How frequently did you use (Medical devices) post to the COVID-19 pandemic?
   a) Daily
   b) Weekly
   c) Monthly
   d) Rarely
   e) Never
4. How would you rate the overall quality of the (Medical Devices) you have used since the COVID-19 pandemic began?
   a) Very Poor
   b) Poor
   c) Average
   d) Good
   e) Excellent
5. How much has your annual expenditure on medical devices increased from pre-COVID to now? (in percentage)
   a) Decreased
   b) Remained the same.
   c) Increased by 0-10%
   d) Increased by 10-20%
   e) Increased by 20% or more.
6. Have you noticed a difference in the affordability of these devices pre-COVID vs post-COVID?
   a) Yes, they are more expensive now.
   b) No, the prices have remained the same.
   c) They have become cheaper.
7. How has the COVID-19 pandemic affected your out-of-pocket expenses for these medical devices?
   a) Increased significantly.
   b) Increased slightly.
   c) Remained the same.
   d) Decreased slightly.
   e) Decreased significantly.

8. Do you feel that the government should take more steps to regulate the prices of these devices?
    a) Yes
    b) No
    c) Not sure

Category - (Knee Implants)

1. Have you ever undergone knee implant surgery?
    a) Yes
    b) No
2. On a scale of 1 to 5, how satisfied are you with the performance and durability of your knee implant?
    a) Very Satisfied (5)
    b) Satisfied (4)
    c) Neutral (3)
    d) Dissatisfied (2)
    e) Very Dissatisfied (1)
    f) Not Applicable
3. What factors were most important to you when choosing a knee implant surgeon or hospital?
    a) Reputation of the surgeon
    b) Hospital facilities
    c) Cost
    d) Personal recommendations
    e) Other (please specify):
    f) Not Applicable
4. Were you able to easily access and obtain the knee implant surgery you needed?
    a) Yes, with no difficulty.
    b) Yes, with some difficulty.
    c) No, had to wait for an extended period.
    d) No, couldn't access it at all.
5. Did the cost of knee implant surgery and related expenses, such as hospital charges and post-operative care, fit within your budget?
    a) Yes, it was affordable.
    b) Yes, but it was a financial strain.

c) No, it was expensive.

d) I did not have to pay (covered by insurance or government)

Category - (Cardiac Stents)

1. Have you ever had a cardiac stent implanted?
   a) Yes
   b) No
2. On a scale of 1 to 5, how satisfied are you with the performance and effectiveness of your cardiac stent?
   a) Very Satisfied (5)
   b) Satisfied (4)
   c) Neutral (3)
   d) Dissatisfied (2)
   e) Very Dissatisfied (1)
   f) Not Applicable
3. What factors were most important to you when choosing a cardiac stent or cardiac intervention? Please rank the following from 1 (most important) to 5 (least important):
   a) Advice from healthcare provider
   b) Cost
   c) Type of stent
   d) Hospital reputation
   e) Other (please specify):
   f) Not Applicable
4. Were you able to easily access and obtain the cardiac stent procedure you needed?
   a) Yes, with no difficulty.
   b) Yes, with some difficulty.
   c) No, had to wait for an extended period.
   d) No, couldn't access it at all.
5. Did the cost of the cardiac stent procedure and related expenses, such as hospital charges and post-operative care, fit within your budget?
   a) Yes, it was affordable.
   b) Yes, but it was a financial strain.
   c) No, it was expensive.
   d) I did not have to pay (covered by insurance or government)

Category - COVID-19 Essential Medical Devices

1. During the COVID-19 pandemic, have you or a family member relied on any essential medical devices? Please select all that apply:
   a) Oxygen Concentrator
   b) Pulse oximeter
   c) Thermometer
   d) Glucometer
   e) BP monitors
   f) Nebulizers
   g) Other (please specify):
2. Did you encounter any challenges in accessing or procuring these essential medical devices during the COVID-19 pandemic? Please select all that apply:
   a) Shortages
   b) High prices
   c) Limited availability
   d) Difficulty in maintenance
   e) Other (please specify):
3. How did the cost of these essential medical devices during the pandemic compared to what you expected?
   a) Much lower than expected.
   b) Lower than expected.
   c) As expected.
   d) Higher than expected.
   e) Much higher than expected.
4. Were you able to easily find and purchase the essential medical devices you needed during the COVID-19 pandemic?
   a) Yes, with no difficulty.
   b) Yes, with some difficulty.
   c) No, had to search extensively.
   d) No, couldn't find them at all.
5. Did you have to pay significantly more for essential medical devices during the COVID-19 pandemic than you would have in normal circumstances?
   a) Yes, much higher prices.
   b) Yes, somewhat higher prices.

c) No, prices were about the same.

d) Not applicable (did not purchase)

11.2.2 Standalone Pharmacies

Section 1: General Information

1. Name of the Retailer:
2. Contact Information:
3. Number of Outlets:

4. Please list all the medical devices you sell or distribute:
   a. Pulse oximeter
   b. Nebulizer
   c. Glucometer
   d. BP monitor
   e. Oxygen concentrator
   f. Digital Thermometer

5. In which geographical regions do you operate? (Tick all that apply)
   a. Urban Areas
   b. Rural Areas
   c. Suburban Areas

6. How many units of Pulse Oximeters do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 20 units
   b. 20 to 40 units
   c. 40 to 70 units
   d. 70+ units

7. How many units of Nebulizers do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 20 units
   b. 20 to 50 units
   c. 51 to 100 units
   d. 101 to 200 units
   e. 201+ units

8. How many units of Glucometers do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 50 units
   b. 51 to 100 units
   c. 101 to 200 units
   d. 201 to 500 units
   e. 501+ units

9. How many units of Blood Pressure (BP) Monitors do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 30 units
   b. 31 to 50 units
   c. 51 to 100 units
   d. 101 to 200 units
   e. 201+ units

10. How many units of Oxygen Concentrators do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 10 units
   b. 11 to 20 units
   c. 21 to 50 units
   d. 51 to 100 units
   e. 101+ units

11. How would you rate the availability of medical devices in the regions you operate?
   a. Very High
   b. High
   c. Moderate
   d. Low
   e. Very Low

12. Have you observed any difference in sales for the listed medical devices post-covid

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Oxygen Concentrator					

13. Do you think that there have been any changes in the quality of listed medical devices post-covid?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Oxygen Concentrator					

14. Do you think that there have been any changes in the prices of listed medical devices pre-covid and post-covid?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Oxygen Concentrator					

15. Have you noticed any changes in the demand for medical devices before and after COVID-19 in your region?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Oxygen Concentrator					

16. Have you faced any challenges in procuring medical devices during COVID-19 in your region?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Oxygen Concentrator		

17. How often did you restock or update your medical device inventory before the COVID-19 pandemic?
    a) Daily
    b) Weekly
    c) Monthly
    d) Quarterly
    e) Annually

18. How often did you restock or update your medical device inventory during the COVID-19 pandemic?
    a) Daily
    b) Weekly
    c) Monthly
    d) Quarterly
    e) Annually

19. Have you introduced any new medical devices in your retail shop post-COVID to meet changing customer needs?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Oxygen Concentrator		

20. Have you faced any regulatory challenges in selling medical devices?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Oxygen Concentrator		

21. Have you noticed any differences in the availability and demand for medical devices in your region during the covid-19 Pandemic?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Oxygen Concentrator		

22. Were you aware of the TMR (Trade Margin Rationalization) notification issued by NPPA for these essential medical devices?

a) Yes
b) No

23. Did the TMR notification affect the availability of the mentioned medical devices in your store?

a) Yes
b) No

24. How has the TMR notification impacted the overall sales of essential medical devices in your store?

a) Increased sales
b) Decreased sales.
c) No significant impact

25.Have your customers reacted to the price changes resulting from the TMR notification? If so, how?

a) Increased sales due to lower prices
b) Decreased sales due to higher prices
c) No noticeable change in customer behaviour

26. Have you observed any shifts in customer demand for specific medical devices after the TMR notification?

a) Increased demand for certain devices
b) Decreased demand for certain devices.
c) No noticeable change in demand

27. How has the TMR notification influenced your inventory management for these medical devices?

a) Increased stock due to lower prices
b) Decreased stock due to price uncertainty.
c) No significant changes in inventory management

28. Have you noticed any changes in the pricing strategies of your competitors for these medical devices?

a) Competitors lowered prices.
b) Competitors raised prices.
c) No significant changes in competitor pricing

11.2.3 Hospital Pharmacies

Section 1: General Information

1. Name of the Hospital:
2. Contact Information:
3. Number of Outlets:
4. Please list all the medical devices you use or sell:
   a. Pulse oximeter
   b. Nebulizer
   c. Glucometer
   d. BP monitor
   e. Oxygen concentrator
   f. Digital Thermometer
   g. Cardiac Stents
   h. Knee Implants

5. In which geographical regions do you operate? (Tick all that apply)
   a. Urban Areas
   b. Rural Areas
   c. Suburban Areas

6. How many units of Pulse Oximeters do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 100 units
   b. 101 to 150 units
   c. 151 to 200 units
   d. 200+ units

7. How many units of Nebulizers do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 50 units
   b. 51 to 100 units
   c. 101 to 150 units
   d. 151 to 200 units
   e. 200+ units

8. How many units of Glucometers do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 50 units
   b. 51 to 100 units
   c. 101 to 200 units

d. 201 to 500 units
e. 501+ units

9. How many units of Blood Pressure (BP) Monitors do you sell on a monthly basis? (Select the appropriate range)
   a. 0 to 30 units
   b. 31 to 50 units
   c. 51 to 100 units
   d. 101 to 200 units
   e. 201+ units

10. How many units of Oxygen Concentrators do you sell on a monthly basis? (Select the appropriate range)
    a. 0 to 10 units
    b. 11 to 20 units
    c. 21 to 50 units
    d. 51 to 100 units
    e. 101+ units

11. How would you rate the availability of medical devices in the regions you operate?
    a. Very High
    b. High
    c. Moderate
    d. Low
    e. Very Low

12. Have you observed any difference in sales for the listed medical devices post-covid?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Knee Implants					
Cardiac Stents					
Oxygen Concentrator					

13. Do you think that there have been any changes in the quality of listed medical devices post-covid?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Knee Implants					
Cardiac Stents					
Oxygen Concentrator					

14. Do you think that there have been any changes in the prices of listed medical devices pre-covid and post-covid?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Knee Implants					
Cardiac Stents					
Oxygen Concentrator					

15. Have you noticed any changes in the demand for medical devices before and after COVID-19 in your region?

Medical Device	Significantly Increased	Slightly Increased	Remains Same	Slightly Decreased	Significantly Decreased
Pulse Oximeter					
Nebulizer					
Glucometer					
BP Monitor					
Digital Thermometer					
Knee Implants					
Cardiac Stents					
Oxygen Concentrator					

16. Have you faced any challenges in procuring medical devices during COVID-19 in your region?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Knee Implants		
Cardiac Stents		
Oxygen Concentrator		

17. How often did you restock or update your medical device inventory before the COVID-19 pandemic?
    a) Daily
    b) Weekly
    c) Monthly
    d) Quarterly
    e) Annually

18. How often did you restock or update your medical device inventory during the COVID-19 pandemic?
    a) Daily
    b) Weekly
    c) Monthly
    d) Quarterly
    e) Annually

19. Have you introduced any new medical devices in your retail shop post-COVID to meet changing customer needs?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Knee Implants		
Cardiac Stents		
Oxygen Concentrator		

20. Have you faced any regulatory challenges in selling medical devices?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Knee Implants		
Cardiac Stents		
Oxygen Concentrator		

21. Have you noticed any differences in the availability and demand for medical devices in your region during the covid-19 Pandemic?

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Knee Implants		
Cardiac Stents		
Oxygen Concentrator		

22. Does your hospital perform knee implant surgeries?

a) Yes
b) No

22.1 If yes, please select the knee implant components your hospital uses:

a) Femoral Component
b) Tibial Component
c) Patellar Component
d) Others (Please specify):

e) Not Applicable

23. Does your hospital perform cardiac stent procedures?

a) Yes
b) No

23.1 If yes, please select the cardiac stent types of your hospital uses:

a) Bare-Metal Stents
b) Drug-Eluting Stents
c) Bioresorbable Vascular Scaffolds (BVS)
d) Others (Please specify):
e) Not Applicable

24. Are you aware of the Trade Margin Rationalization (TMR) notifications issued by NPPA for essential medical devices like oxygen concentrators, thermometers, glucometers, BP monitors, pulse oximeters, and nebulizers?

a) Yes
b) No

25. Have you observed any changes in the sales of the following medical devices after the TMR notifications were implemented? (Select all that apply)

a) Oxygen Concentrators
b) Thermometers
c) Glucometers
d) BP Monitors
e) Pulse Oximeters
f) Nebulizers
g) No significant change in sales for any device

26. Has the demand for these essential medical devices changed after the TMR notifications were implemented?

a) Increased
b) Decreased
c) Remained stable.

11.2.4 Manufacturers

Manufacturer Information:

1. Name of the Company:
2. Contact Information:
3. Please select the medical devices that are manufactured by your company:

Medical Device	Yes	No
Pulse Oximeter		
Nebulizer		
Glucometer		
BP Monitor		
Digital Thermometer		
Knee Implants		
Cardiac Stents		
Oxygen Concentrator		

4. How has the sales unit of your medical devices changed after the Covid-19 pandemic?
   a) Increased significantly
   b) Increased slightly.
   c) Remain Same
   d) Decreased slightly
   e) Decreased significantly

5. Has there been a change in the number of units manufactured after the Covid-19 pandemic?
   a) Increased significantly
   b) Increased slightly.
   c) Remain Same
   d) Decreased slightly
   e) Decreased significantly

6. Has there been a change in demand for your medical devices due to the Covid-19 pandemic?
   a) Increased significantly
   b) Increased slightly.
   c) Remain Same
   d) Decreased slightly
   e) Decreased significantly

7. Did you face any challenges in sourcing raw materials for manufacturing your medical devices during the Covid-19 pandemic?
   a) No challenges faced
   b) Minimal challenges faced
   c) Moderate challenges faced
   d) Significant challenges faced.

8. Has there been a change in availability of raw materials for your medical device manufacturing after the Covid-19 pandemic?
   a) Increased significantly
   b) Increased slightly
   c) Remain Same
   d) Decreased slightly
   e) Decreased significantly

9. Has there been any impact on product quality due to the Covid-19 pandemic?
   a) No impact on quality
   b) Minimal impact on quality
   c) Moderate impact on quality
   d) Significant impact on quality.

10. Have you received any feedback from customers regarding the quality of your medical devices after the Covid-19 pandemic?
    a) No feedback received
    b) Minimal feedback received
    c) Moderate feedback received
    d) Significant feedback received.

11. Has there been a change in the overall productivity of your business after the Covid-19 pandemic?
    a) Increased significantly
    b) Increased slightly
    c) Remain Same
    d) Decreased slightly
    e) Decreased significantly

12. Did you experience any disruptions in your supply chain during the Covid-19 pandemic?
    a) No disruptions experienced
    b) Minimal disruptions experienced
    c) Moderate disruptions experienced
    d) Significant disruptions experienced.

13. Have you faced any regulatory challenges in manufacturing and distributing your medical devices during the Covid-19 pandemic?
    a) No regulatory challenges faced
    b) Minimal regulatory challenges faced
    c) Moderate regulatory challenges faced
    d) Significant regulatory challenges faced

14. Have you made any changes to your marketing strategy for promoting and selling your medical devices during the Covid-19 pandemic?
    a) No changes made
    b) Minimal changes made
    c) Moderate changes made
    d) Significant changes made.

15. How satisfied are you with the overall performance of your medical device manufacturing business after the Covid-19 pandemic?
    a) Extremely satisfied
    b) Satisfied
    c) Neutral/Neither satisfied nor dissatisfied
    d) Dissatisfied.

16. Have you implemented any changes in your manufacturing process to adapt to the Covid-19 pandemic situation?
    a) No changes implemented
    b) Minimal changes implemented
    c) Moderate changes implemented
    d) Significant changes implemented.

17. Has there been any change in level of market competition during COVID-19?
    a) Increased significantly
    b) Increased slightly
    c) Remain Same
    d) Decreased slightly
    e) Decreased significantly

18. How would you rate the level of market competition after COVID-19?
    a) Increased significantly
    b) Increased slightly
    c) Remain Same
    d) Decreased slightly
    e) Decreased significantly

19. Have there been any significant changes in your profit margins after COVID-19?
    a) Yes
    b) No

20. Have you observed any changes in your market share after COVID-19?
    a) Yes
    b) No

21. How much emphasis did your company place on research and development before COVID-19?
    a) Very Low
    b) Low
    c) Moderate
    d) High
    e) Very High

22. How much importance does your company currently place on research and development after COVID-19?
    a) Very Low
    b) Low
    c) Moderate
    d) High
    e) Very High

23. Have you initiated any new research and development projects after COVID-19?
    a) Yes
    b) No

24. If yes, what areas of medical device development are you focusing on? (Select all that apply)
    a) Enhancing existing products
    b) Developing new products for emerging health concerns
    c) Improving manufacturing processes
    d) Addressing sustainability challenges
    e) Other (Please specify)

25. How many units of medical devices did your company sell on average per month before COVID-19?
    a) 0 to 100 units
    b) 101 to 500 units
    c) 501 to 1,000 units
    d) 1,001 to 5,000 units
    e) 5,001+ units

26. How many units of medical devices did your company sell on average per month after COVID-19?
    a) 0 to 100 units
    b) 101 to 500 units
    c) 501 to 1,000 units
    d) 1,001 to 5,000 units
    e) 5,001+ units

27. Did your company experience any challenges in meeting the increased demand for medical devices after COVID-19?
    a) Yes
    b) No

28. If yes, what were the main challenges faced? (Select all that apply)
    a) Shortage of raw materials
    b) Manufacturing capacity constraints
    c) Distribution/logistics issues
    d) Workforce limitations
    e) Other (Please specify)

29. How many units of medical devices could your company manufacture on average per month before COVID-19?
    a) 0 to 1,000 units
    b) 1,001 to 5,000 units
    c) 5,001 to 10,000 units
    d) 10,001 to 50,000 units
    e) 50,001+ units

30. How many units of medical devices can your company manufacture on average per month after COVID-19?
    a) 0 to 1,000 units
    b) 1,001 to 5,000 units
    c) 5,001 to 10,000 units

d) 10,001 to 50,000 units
e) 50,001+ units

31. Did the availability of raw materials impact your manufacturing capabilities after COVID-19?
    a) Yes
    b) No

32. If yes, which raw materials were most affected? (Select all that apply)
    a) Electronic components
    b) Plastic materials
    c) Metals
    d) Batteries
    e) Other (Please specify)

33. Were you aware of the TMR (Trade Margin Rationalization) notifications issued by NPPA for COVID essential medical devices?
    a) Yes
    b) No

34. Since the implementation of the TMR notification, have you observed any change in the pricing of your COVID essential medical devices? (Oxygen concentrator, Glucometer, pulse oximeter, thermometer, BP monitor, nebulizer)
    a) Prices have increased.
    b) Prices have decreased.
    c) Prices have remained relatively stable.

35. Have you experienced any shifts in demand for your COVID essential medical devices following the TMR notification? (Oxygen concentrator, Glucometer, pulse oximeter, thermometer, BP monitor, nebulizer)
    a) Increased demand
    b) Decreased demand.
    c) No significant change in demand

36. Has the TMR notification impacted your production costs for these medical devices? (Oxygen concentrator, Glucometer, pulse oximeter, thermometer, BP monitor, nebulizer)
    a) Increased production costs
    b) Decreased production costs.
    c) No significant change in production costs

37. Has the NPPA notification had any noticeable impact on the sales volume of your COVID essential medical devices? (Oxygen concentrator, Glucometer, pulse oximeter, thermometer, BP monitor, nebulizer)
    a) Sales have increased.
    b) Sales have decreased.
    c) No significant change in sales

11.2.5 Importers

General Information:

Company Name:

Importer Name:

Contact Information:

Location & Address:

1. Years in the Medical Device Import Business:
a) Less than 1 year
b) 1-3 years
c) 4-7 years
d) More than 7 years

2. Which medical devices do you primarily import? (Select all that apply)
a) Oxygen Concentrators
b) Pulse Oximeters
c) Glucometers
d) Thermometers
e) Blood Pressure Monitors
f) Nebulizers
g) Cardiac Stents
h) Knee Implants
i) None of the above

Impact on Sales (Pre and Post COVID-19):

1. Pre-COVID-19, how would you describe the sales performance of the medical devices you import?
a) Excellent
b) Good
c) Satisfactory
d) Poor
e) Very Poor

2. How has the sales performance of these medical devices been affected since the start of the COVID-19 pandemic?
a) Increased significantly.
b) Increased moderately.
c) Remained stable.
d) Decreased moderately.
e) Decreased significantly.

3. If sales decreased during COVID-19, what were the primary reasons? (Select all that apply)
a) Supply chain disruptions
b) Reduced demand
c) Regulatory challenges
d) Competition
e) None

4. Post-COVID-19, has the sales performance of these medical devices recovered to pre-COVID-19 levels?
a) Yes, fully recovered.
b) Yes, partially recovered.
c) No, still below pre-COVID levels.

Impact on Demand (Pre and Post COVID-19):

1. Did you experience changes in demand for medical devices pre-COVID-19?
a) Yes
b) No

2. What factors influenced the change in demand pre-COVID-19? (Select all that apply)
a) Aging population
b) Increased awareness of health monitoring
c) Government policies
d) Seasonal fluctuations
e) Other (please specify): _____
f) None

3. Post-COVID-19, has the demand for medical devices changed compared to pre-COVID-19 levels?
a) Increased significantly.
b) Increased moderately.
c) Remained stable.
d) Decreased moderately.
e) Decreased significantly.

4. How do you typically source the medical devices you import?
a) Directly from manufacturers
b) Through distributors or wholesalers
c) Other (please specify): _____

5. How has the COVID-19 pandemic impacted your supply chain for medical devices?
a) Disruptions in manufacturing
b) Delays in shipping
c) Increased lead times
d) Difficulty sourcing raw materials.
e) Other (please specify): _____
f) None of the Above

6. Who are your primary competitors in the medical device import market?
a) Local distributors
b) International importers
c) Manufacturers' direct sales
d) Other (please specify): _____

7. Are you aware of the Trade Margin Rationalization (TMR) notification by NPPA for essential medical devices?
a) Yes
b) No

8. How has the TMR notification impacted your sales and pricing strategy for the affected medical devices?
a) Significantly increased sales
b) Increased sales moderately
c) No significant impact on sales
d) Decreased sales moderately.
e) Significantly decreased sales.

9. Do you believe the TMR notification has positively or negatively affected your competitive position in the market for these medical devices?
a) Positively
b) Negatively
c) No significant impact

10. How has the demand for these essential medical devices changed since the implementation of the TMR notification?
a) Increased significantly.
b) Increased moderately.
c) Remained stable.
d) Decreased moderately.
e) Decreased significantly.

11. What factors do you believe have influenced the change in demand for these medical devices post-TMR notification? (Select all that apply)
a) Pricing changes
b) Increased affordability
c) Competition
d) Regulatory compliance
e) Other (please specify): _____

11.2.6 Distributors

1. General Information:

   1.1 Name of Distributor:

   1.2 Contact Information (Email and Phone Number):

1.3 Location of Business:

2. Medical Devices:

Please indicate the medical devices you supply:

Medical Device	Yes	No
Cardiac Stents		
Knee Implants		
BP Monitors		
Glucometers		
Pulse Oximeter		
Oxygen Concentrator		
Digital Thermometer		
Nebulizer		

3. Pre-COVID and Post-COVID Supply:

3.1 For each medical device listed above, please provide the average monthly supply (in units) before the COVID-19 pandemic (pre-COVID period).

Medical Device	<10	10 - 30	30 – 50	>50
Cardiac Stents				
Knee Implants				
BP Monitors				
Glucometers				
Pulse Oximeter				
Oxygen Concentrator				
Digital Thermometer				
Nebulizer				

Medical Device Pre-COVID Supply (Monthly Units)

3.2 For each medical device listed above, please provide the average monthly supply (in units) during the COVID-19 pandemic (post-COVID period).

Medical Device	<10	10 - 30	30 – 50	>50
Cardiac Stents				
Knee Implants				
BP Monitors				
Glucometers				
Pulse Oximeter				
Oxygen Concentrator				
Digital Thermometer				
Nebulizer				

Medical Device Post-COVID Supply (Monthly Units)

4. Changes in Demand:

4.1 How has the demand for each medical device changed during the COVID-19 pandemic compared to the pre-COVID period? (Please provide specific details for each device)

Medical Device	Sales		Demand		Supply		Frequency		
	High	Low	High	Low	High	Low	High	Low	Moderate
Cardiac Stents									
Knee Implants									
BP Monitors									
Glucometers									
Pulse Oximeter									
Oxygen Concentrator									
Digital Thermometer									
Nebulizer									

5. Cost Measures:

5.1 Has there been any significant change in the cost of acquiring the medical devices during the COVID-19 pandemic compared to the pre-COVID period? (e.g., price fluctuations, increased manufacturing costs, shipping costs)

5.2 If there have been cost changes, please explain the factors influencing the cost fluctuations.

6. Supply Chain Challenges:

6.1 Did you experience any supply chain disruptions for any of the medical devices during the COVID-19 pandemic? If yes, please specify which devices and the reasons for the disruptions.

7. New Suppliers and Manufacturers:

7.1 Have you collaborated with new suppliers or manufacturers for any of the listed medical devices during the COVID-19 pandemic? If yes, please specify the devices and reasons for the collaborations.

8. Regulatory Changes:

8.1 Have there been any notable regulatory changes or challenges in the procurement and distribution of medical devices during the COVID-19 pandemic?

9. Product Preferences:

9.1 Have there been any changes in customer preferences for specific brands or types of medical devices during the COVID-19 pandemic? If yes, please elaborate.

10. Are you aware of the recent TMR notification by NPPA regarding the pricing of essential medical devices?

a) Yes
b) No

11. How has the NPPA TMR notification impacted your distribution of essential medical devices?

a) Decreased distribution volume.
b) Increased distribution volume
c) No significant impact
d) Other (please specify): _____

12. Has the TMR notification affected the pricing of the following medical devices in your inventory? (Check all that apply)

a) Oxygen Concentrators
b) Pulse Oximeters
c) Glucometers
d) Thermometers
e) Blood Pressure Monitors
f) Nebulizers

13. Have you noticed any change in sales volume for the following medical devices following the TMR notification? (Check all that apply)

a) Oxygen Concentrator
b) Pulse Oximeters
c) Glucometers
d) Thermometers
e) Blood Pressure Monitors
f) Nebulizers

14. Future Outlook:

14.1 How do you foresee the demand and supply of medical devices changing in the post-pandemic period? Are there any long-term impacts that you anticipate?

15. Additional Comments:

11.2.7 Wholesalers

1. General Information:

   1.1 Name of Wholesaler:

   1.2 Contact Information (Email and Phone Number):

   1.3 Location of Business:

   1.4 Type of Business:

   a) Sole Proprietorship
   b) Partnership
   c) Corporation

2. Medical Devices:

Please indicate the medical devices you supply:

Medical Device	Yes	No
Cardiac Stents		
Knee Implants		
BP Monitors		
Glucometers		
Pulse Oximeter		
Oxygen Concentrator		
Digital Thermometer		
Nebulizer		

3. Pre-COVID and Post-COVID Supply:

3.1 For each medical device listed above, please provide the average monthly supply (in units) before the COVID-19 pandemic (pre-COVID period).

Medical Device	<10	10 - 30	30 – 50	>50
Cardiac Stents				
Knee Implants				
BP Monitors				
Glucometers				
Pulse Oximeter				
Oxygen Concentrator				
Digital Thermometer				
Nebulizer				

Medical Device Pre-COVID Supply (Monthly Units)

3.2 For each medical device listed above, please provide the average monthly supply (in units) during the COVID-19 pandemic (post-COVID period).

Medical Device	<10	10 - 30	30 – 50	>50
Cardiac Stents				
Knee Implants				
BP Monitors				
Glucometers				
Pulse Oximeter				
Oxygen Concentrator				
Digital Thermometer				
Nebulizer				

Medical Device Post-COVID Supply (Monthly Units)

4. Changes in Demand:

4.1 How has the demand for each medical device changed during the COVID-19 pandemic compared to the pre-COVID period? (Please provide specific details for each device)

Medical Device	Sales		Demand		Supply		Frequency		
	High	Low	High	Low	High	Low	High	Low	Moderate
Cardiac Stents									
Knee Implants									
BP Monitors									
Glucometers									
Pulse Oximeter									
Oxygen Concentrator									
Digital Thermometer									
Nebulizer									

5. Cost Measures:

5.1 Has there been any significant change in the cost of acquiring the medical devices during the COVID-19 pandemic compared to the pre-COVID period? (e.g., price fluctuations, increased manufacturing costs, shipping costs)

5.2 If there have been cost changes, please explain the factors influencing the cost fluctuations.

6. Supply Chain Challenges:

6.1 Did you experience any supply chain disruptions for any of the medical devices during the COVID-19 pandemic? If yes, please specify which devices and the reasons for the disruptions.

7. New Suppliers and Manufacturers:

7.1 Have you collaborated with new suppliers or manufacturers for any of the listed medical devices during the COVID-19 pandemic? If yes, please specify the devices and reasons for the collaborations.

8. Regulatory Changes:

8.1 Have there been any notable regulatory changes or challenges in the procurement and distribution of medical devices during the COVID-19 pandemic?

9. Product Preferences:

9.1 Have there been any changes in customer preferences for specific brands or types of medical devices during the COVID-19 pandemic? If yes, please elaborate.

10. Are you aware of the Trade Margin Rationalization (TMR) notification issued by NPPA for essential medical devices like oxygen concentrators, pulse oximeters, glucometers, thermometers, blood pressure monitors, and nebulizers?

a) Yes
b) No

11. Since the implementation of the TMR notification, have you observed any changes in the demand for the mentioned medical devices?

a) Increased
b) Decreased
c) No Significant Change

12. How have the pricing changes influenced your sales of these medical devices?

a) Increased sales
b) Decreased sales.
c) No significant impact

13.Have you experienced any resistance from customers due to the revised pricing under the TMR notification?

a) Yes
b) No

14. Has the TMR notification affected your inventory management for these medical devices?

a) Yes
b) No

15. Have you noticed any changes in the pricing strategies of your competitors for the mentioned medical devices after the TMR notification?

a) Yes
b) No

16. Future Outlook:

16.1 How do you foresee the demand and supply of medical devices changing in the post-pandemic period? Are there any long-term impacts that you anticipate?

17. Additional Comments: