

Telangana Kanti Velugu 2023: Universal Access for Eye Screening and Provision of Quality Spectacles for Millions - A Case Study in Effective Supply Chain Management, Operations, and Cost Effectiveness by TSMSIDC & CHFV, DoHMFV, Govt. of Telangana, India

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Abstract: A large percentage of vision impairments is avoidable and can be addressed with a simple pair of glasses or a cataract surgery, but people, particularly among women and the elderly, tend to live with these eye problems or postpone it until it's too late. To address the same, the Government of Telangana, India, has launched an initiative called "Kanti Velugu" with a vision of building "Avoidable Blindness Free Telangana". This initiative, proposed by the Hon'ble CM himself, is first-of-its-kind in India. It revolves around universal eye screening, providing reading glasses and medicines on the spot, prescription glasses within 30 days and arranging for surgeries or other forms of treatments. Also, it is intended to create awareness about eye care and the prevention of severe eye diseases. This case study focuses on highlighting some of the best practices employed by TSMSIDC and other stakeholders for seamless supply chain management leading to a successful implementation of the Kanti Velugu 2023 program for 100 days. As this is a time-bound program, it is vital to ensure that required spectacles, equipment and other essentials are available at all KV camps throughout the 100 days. The key aspects emphasised throughout the paper are planning, procurement, distribution, monitoring, cost savings, etc., for ensuring efficient and effective delivery of services to the public free of cost.

Keywords: Avoidable Blindness, Supply Chain Management, Inventory Management, Cost effectiveness, Turnaround time (TAT), Comprehensive Annual Maintenance Contract (CAMC)

1. Introduction

Telangana State Medical Services and Infrastructure Development Corporation (TSMSIDC) is an enterprise of the Government, and an **ISO 9001:2015 Certified Organization**, functioning under the control of Government of Telangana, bifurcated from erstwhile APMSIDC on 28-08-2014 vide G.O. Ms No: 14, HM & FW (C2).

The corporation is entrusted with the responsibility of procuring and supplying medicines, surgical consumables, diagnostic reagents, medical equipment and its maintenance, and furniture for all Government Hospitals in the State. It also undertakes civil infrastructure works such as the construction of hospitals, medical colleges and other establishments functioning under the control of the Health Medical & Family Welfare Department.

It also undertakes some special projects related to the initiatives of the Health Medical & Family Welfare Department.

As TSMSIDC is the nodal agency to HMFV, Government of Telangana for procurement, it has been instructed to procure and supply reading glasses, prescription glasses,

autorefractometers, essential medicines and other identified items for conducting Comprehensive and Universal Eye Screening Programme.

1.1. Kanti Velugu:

To work towards "Avoidable Blindness Free Telangana", the Government has decided to take up universal eye screening by covering the entire population of the state under the name "Kanti Velugu". The program was first launched on August 15th, 2018. The program's beneficiaries are Telangana's **3.50 crore** citizens. All state citizens are eligible for the benefit under the program, regardless of their social or economic circumstances.

The Objectives of the program are to:

- Conduct Comprehensive and Universal Eye Screening for all the citizens of Telangana.
- Provide spectacles at free of cost to those that require correction of Refraction Errors.
- Arrange for surgeries at free of cost in cases of Cataract, Glaucoma, Retinopathy, Corneal Disorders, etc.
- Provide medicines for common eye ailments.
- Create awareness among citizens of Telangana on eye care and prevention of serious eye diseases.

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1.1.1. Kanti Velugu 2018:

The Kanti Velugu Programme was first launched by Hon'ble Chief Minister at Toopran PHC, Malkapur, Medak

Some of the key aspects of Kanti Velugu 2018 program are tabulated below:

Table 1: Key Aspects of Kanti Velugu 2018 Program

Field Deployment	Total teams	827
	Medical officers	850
	Optometrists	900
	Support staff	8200
	Total staff across 827 teams	9940
Screening & Glasses Distribution	Overall Screening	1.56 Crores
	Reading glasses distributed	24.68 Lakhs
	Prescription glasses distributed	14.97 Lakhs
	Total glasses distributed	39.65 Lakhs

1.1.2. Kanti Velugu 2023

Based on the success of the 2018 program, the program was re-launched by the Hon'ble Chief Minister of Telangana on 18.01.2023 at Khammam in the presence of 3 Chief Ministers i.e., of Delhi, Punjab, and Kerala, to conduct universal eye screening of the population.

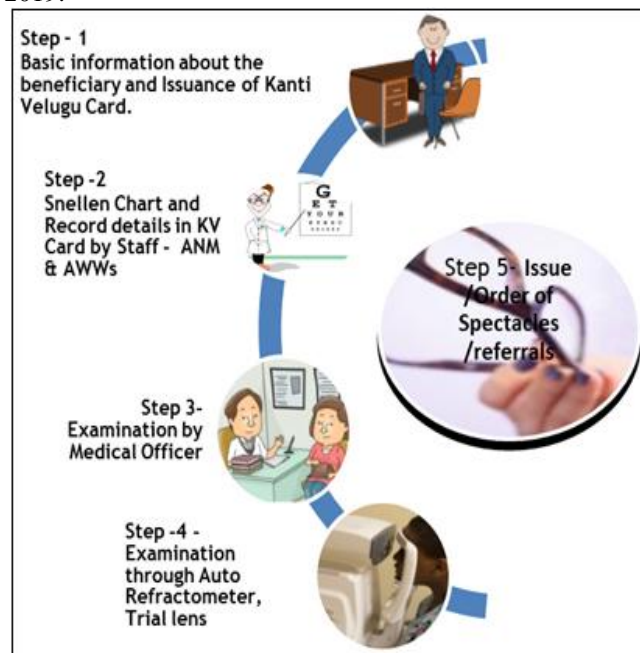
Some of the key aspects of the Kanti Velugu 2023 program are:

- Program commenced from 19.01.2023 and lasted for a period of 100 days. No camps were held on Saturdays, Sundays, and public holidays.
- 1500 teams have been constituted for conducting eye screening. An additional 5% has been identified as a buffer in case of contingencies.
- Each team has 1 medical officer, 1 ophthalmic assistant, 1 supervisory officer, 2-3 ANM/ ASHA and 1 DEO with CHFW as the nodal officer at the state level.
- Total camp locations are 16,556. Out of which, 12,768 are rural locations, 3,498 are urban locations and 290 are GHMC locations.
- Each person's eye examination information will be electronically captured and linked to their **Adhaar card**. This will assist in providing post-operative care and complimentary eyewear to the patient.

1.1.2.1. Procedure at Camp Level

As can be seen in *Figure-1*, an efficient process workflow is designed to ensure that every beneficiary receives quality eye care and vision correction in a timely and efficient manner. These are the 5 steps adopted at camp level and are as follows:

District on 15.08.2018 with a vision to build "Avoidable Blindness Free Telangana". The program concluded in April 2019.

**Figure 1: Process flow at Kanti Velugu Camps****Step 1: Registration Desk**

The beneficiaries are registered at the desk by filling in a form with their personal details and contact information. They are also given a unique identification number and a token for the next step.

Step 2: Unaided Visual Acuity (UVA)

The beneficiaries are tested for their unaided visual acuity using a Snellen chart. The chart is placed at a distance of six meters and the beneficiaries are asked to read the smallest line they can see. The results are recorded on their form and token.

Step 3: Examination by Medical Officer

The beneficiaries are examined by a medical officer who checks for any eye diseases or abnormalities. The medical officer also prescribes the appropriate power of spectacles if needed. The prescription is written on their form and the patients who need further examination are referred to the ophthalmologist, who diagnoses their eye condition and prescribes treatment or surgery if needed.

Step 4: Objective Refraction & Subjective Refraction

The beneficiaries are subjected to an objective refraction test using an auto-refractometer. The device measures the refractive error of the eye and displays the power of spectacles required. The results are verified with the prescription given by the medical officer and any discrepancies are resolved.

Step 5: Issue /Order of Spectacles /referrals

The beneficiaries are given their spectacles according to their prescription. The spectacles are free of cost and come in different styles and colors. The beneficiaries are also advised on how to use and care for their spectacles.

2. Planning

Based on the success of the KV 2018 program, it has been decided to relaunch the program as KV 2023. While planning for the KV 2023 program, experiences, outputs, best practices, bottlenecks during the KV 2018 program have been considered.

Table 2: Key aspects of Kanti Velugu 2018 Vs 2023 Programs

S. No	Description	Kanti Velugu 2018 Statistics	Kanti Velugu 2023 Plan/projections
1	Budget	220 Crores	200 Crores
2	No. of teams	827	1500
3	Duration of the program	145 days	100 days
4	Overall screening	1.56 Crores	1.8 Crores (Projected)
5	Reading Glasses	24.68 Lakhs	30 Lakhs
6	Prescription Glasses	14.97 Lakhs	25 Lakhs
7	Autorefractometers	827	1575
8	Trial lens boxes	827	1575
9	Snellen Charts	2481	4500 (@ 3 per team)
10	Kanti Velugu Kit Bag (Torch, mirror, bag, etc.)	827	1500

In view of the higher projected screening in KV 2023 program, the program was setup for 100 days with 1500 teams. Similarly, the requirement of reading glasses and prescription glasses was projected to be 30 lakhs and 25 lakhs respectively.

Some of the **best practices** from the KV 2018 program have been identified and have been adapted in the KV 2023 program as well with some additions.

- Procedure at camp level during the KV 2018 program was efficient and easy to follow, with no unnecessary steps and delays.
- Monitoring was done at both State and District Level by concerned Health Department Officials.
- Active participation by the public representatives led to a smooth conduct of the program.

All the challenges/bottlenecks from the KV 2018 program have been identified and have come up with multiple solutions.

Table 3: Challenges faced during Kanti Velugu 2018 Program

Bottlenecks/Challenges faced during KV 2018	Procedure followed during KV 2023
Spectacles were Made in Shanghai, China resulting in higher lead time and higher costs	Spectacles were made in Sultanapur, Telangana, India & Maharashtra, India resulting in lesser lead time and lower costs.
Sub optimal awareness and participation among the public	Awareness and participation among the public was enhanced through wide publicity via multiple social media platforms.
IT System: Inadequate monitoring and evaluation: Only District level monitoring was done.	IT System: Enhanced monitoring and evaluation: Village level monitoring and issuing of spectacles to beneficiary level.
Identification and distribution of prescription glasses received from vendors was challenging.	Vendors were asked to stick a unique QR code label on each box which captures all the beneficiary information & ASHA information. A mobile application was developed using which these QR codes can be scanned for distribution.
Centralised supplies: Only Prescription glasses were delivered to centralised location in Hyderabad, Telangana and from there to districts dispatched were done.	Decentralised Supplies: The Vendors have supplied directly to DMHOs.

Some of the major activities that constitute the action plan are:

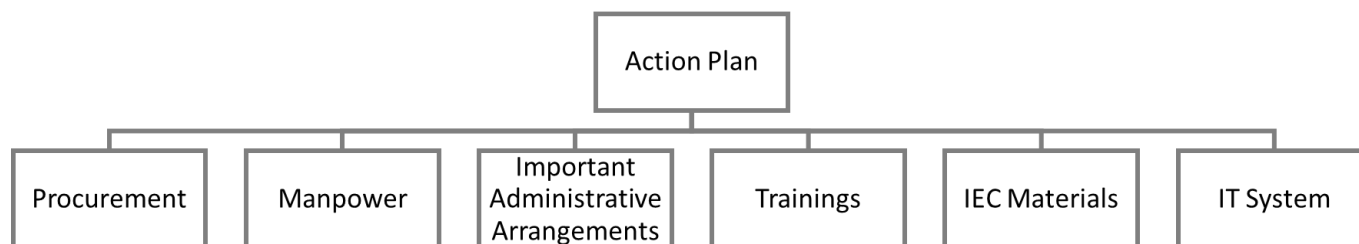


Figure 2: Action Plan for Kanti Velugu 2023 Program

TSMSIDC has been entrusted with the responsibility of procurement related activities along with the responsibility of ensuring availability of required IEC materials at all camps.

3. Implementation (Procurement by TSMSIDC)

TSMSIDC has carried out the following procurement activities:

- Reading Glasses
- Prescription Glasses
- Autorefractometers and other equipment
- Standard Medicines
- IEC Material

Initial phase of procurement:

TSMSIDC has invited 9 tenders with different tender schedules for procurement and supply of Spectacles,

Equipment and IEC material required to run the program in all the 33 districts.

- The TSMSIDC did a market survey to determine the sources and suppliers of each item.
- Factory Inspection was done by the technical members to ensure the capacity, availability of required equipment for production of spectacles.

- 9 No of tenders were invited from 19.11.2022 to 23.12.2022 on e-Procurement and GeM portal.

A transparent tender process was followed by TSMSIDC through the e-Procurement/GEM platforms as shown in **Figure-3**

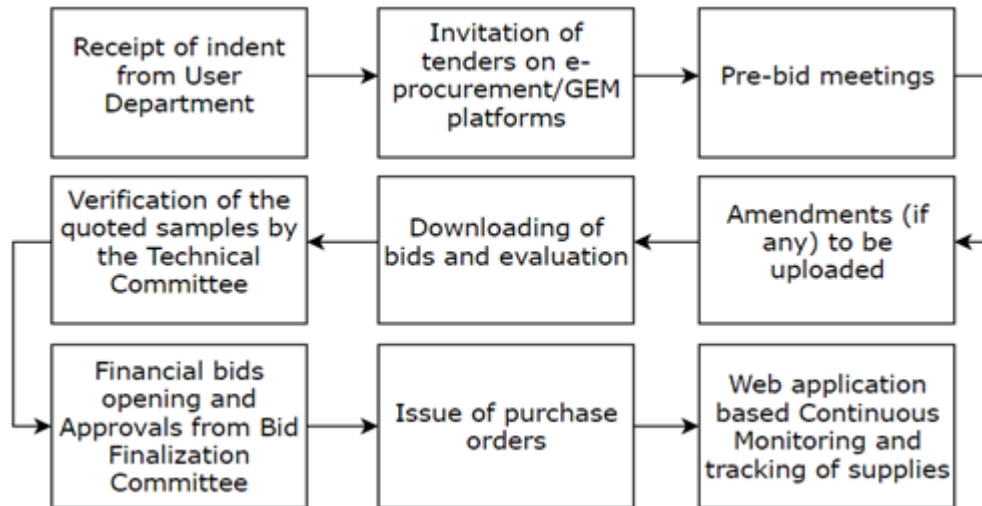


Figure 3: Procurement process flow at TSMSIDC

- 18 Purchase orders were issued amounting to Rs. 120.48 Crores for procurement of various equipment and other items for the KV 2023 program.
- Equipment including 850 Autorefractometers, 1200 Trial lenses boxes, 1500 Trail frames, 4,500 Vision Charts, 1500 Torch Lights, 1500 Measuring tape and other required equipment and material were procured and supplied to all the DMHOs.
- Identified IEC material was procured and supplied to all the DMHOs.
- The Autorefractometer L1 price was negotiated to Rs.3,15,320/- per unit from Rs.3,20,320/-. Saving an amount of **Rs. 42,50,000/-**. The purchase orders were issued in the ratio of 50:30:20.
- The price of Reading glasses (spectacles) was negotiated to Rs.80.64/- per unit from Rs.87.49/- inclusive of all taxes. Saving an amount of **Rs. 2,05,50,000/-**.
- 30 Lakh of spectacles with reading glasses (with powers ranging from with powers +1.00 D to +3 D, with an interval of 0.50 D) and 25 lakh Spectacles fitted with prescription (Rx) lenses were procured for this programme.
- The 2 bidders identified supplied all 30 lakhs reading glasses during the course of the program.

Continuous Monitoring Phase:

The supply of items within the milestone is a crucial factor for the success of the project. The supply schedule of items within the milestone was planned, monitored, and controlled

by TSMSIDC to ensure that they were available and timely supplied.

The following steps are taken by TSMSIDC to manage the supply of items within the milestone.

- 1) Track and verify the status and condition of each item.
- 2) Reporting of day-to-day supply of items was maintained within the milestone.
- 3) For Spectacles (Reading glasses), the production capacity and layout of the bidders were monitored. Both firms have supplied 30 Lakhs reading glasses.

- Reading glasses, Auto refractometers, IEC Material and other identified items for the program were delivered to the camps before the start of the program as per the timelines laid in milestones.
- The indent for prescription glasses were shared every day with the suppliers based on the requirement raised in the eye screening camps.
- The data sharing couldn't be achieved during the first two weeks of the program due to some technical glitches in the application due to which the prescription glasses requirement got held up.
- The supplies started as and when the data sharing started from the 3rd week. It was observed that the supply % was only 8% of the requirement as it got held up in the first two weeks.
- To assess the situation, TSMSIDC conducted a time and motion analysis to see if the identified suppliers could match their daily productions with the daily requirement at the camps.

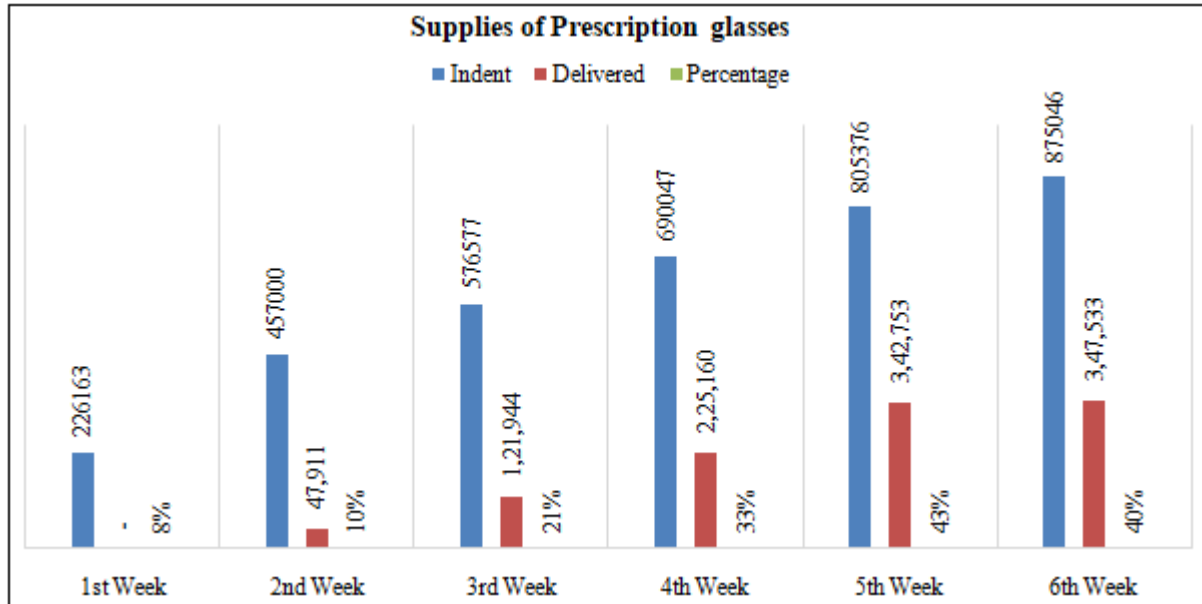


Figure 4: Supply status of Prescription Glasses in the first 6 weeks

- The production capacity of the vendors was perused. Factories have been inspected to understand the production layout and assess the daily production capacity.

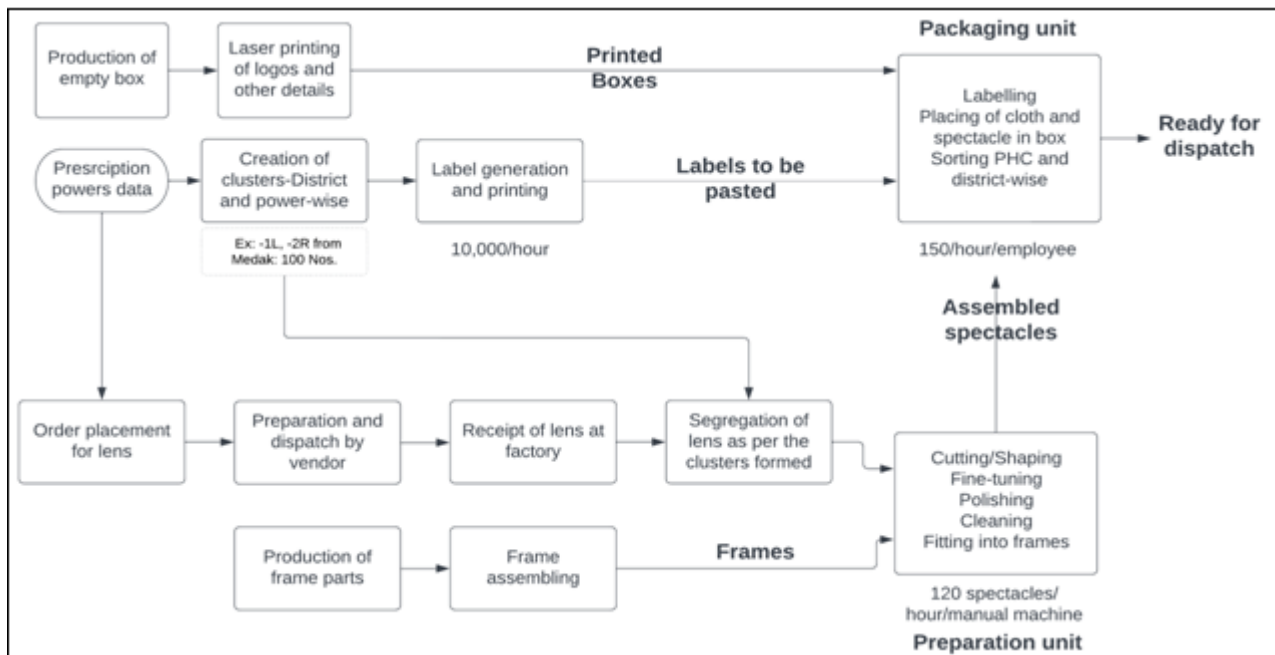


Figure 5: Production layout of Firm-1

Based on the above, the daily production capacity of Firm-1 turned out to be 26,880 if it runs for 2 shifts.

Production capacity of Firm-1										
Type of machine	No. of machines	Turnaround time for cutting one lens	No of lenses/one minute	No of lenses/one hour	No of lenses per machine			Total no. of lenses		
					8 Hour Shift	16 Hours Shift	24 Hour Shift	8 Hour Shift	16 Hours Shift	24 Hour Shift
Manual operated Machine	4	15 Sec	4	240	1,920	3,840	5,760	7,680	15,360	23,040
Semi Edger Machine	5	75 Sec	0.8	48	384	768	1,152	1,920	3,840	5,760
Auto edger machine	2	3.33 Sec	18	1,080	8,640	17,280	25,920	17,280	34,560	51,840
Total no. of lenses								26,880	53,760	80,640
Total no. of spectacles (lenses/2)								13,440	26,880	40,320

Figure 6: Daily Production Capacity of Firm-1

- Further, the production layout and capacity of Firm-2 were also assessed as shown in Figure-7 & 8

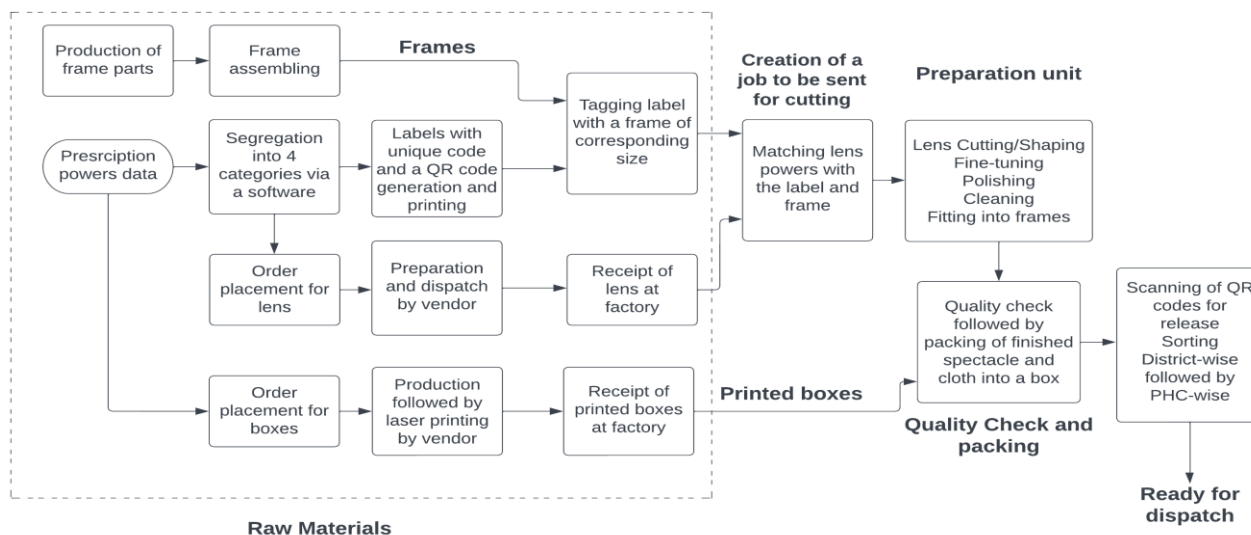


Figure 7: Production layout of Firm-2

- Based on the above, the daily production capacity of Firm-2 turned out to be 15,600 Nos, if it runs for 1 shift a day (10 hours).

Production capacity of Firm-2								
Type of machine	No. of machines	Turnaround time for cutting one lens	No of lenses/one minute	No of lenses/one hour	No of lenses during 8 hour shift per machine	No of lenses during 10 hour shift per machine	Total no. of lenses during 8 hours	Total no. of lenses during 10 hours
Automatic lens cutting/shaping machine	8	15 Sec	4	240	1,920	2,400	15,360	19,200
Semi-automatic lens cutting/shaping machine	5	15 Sec	4	240	1,920	2,400	9,600	12,000
Total no. of lenses							24,960	31,200
Total no. of spectacles (lenses/2)							12,480	15,600

Figure 8: Daily Production Capacity of Firm-2

- The capacity of both vendors combined per day turned out to be 26,000 Nos per day, but till the 6th week, the average supplies made was only around 15,000 per day.
- Whereas the data received daily, or the beneficiaries identified daily were 36,000.
- Although both the suppliers were able to procure lens and frames, the major bottleneck lay in edging the lenses and fitting the lenses in the frames which require a lot of time and human intervention, and this fitting cannot be done through a machine.
- It was observed that due to the above cited reasons, both the suppliers were not able to supply the prescription glasses within the stipulated time which led to a gap of over 5 Lakhs by 6th week of the program.
- If no further action was taken, the gap would have gone up to 10 Lakhs by the end of the program. In such a scenario, the beneficiaries would be receiving the glasses 2-3 months after their screening.
- To overcome the situation, TSMSIDC has decided to empanel additional firms that can fill the held-up gap in supplies of prescription glasses.
- TSMSIDC has called for bidders asking to submit “Expression of Interest (EoI)” to supply prescription glasses at the existing L1 price. After evaluating the responses received, TSMSIDC has empaneled 4 new firms that met the defined criteria and purchase orders were issued.
- The results of empanelment were evident as the supply % increased week by week as can be seen in the below graph:

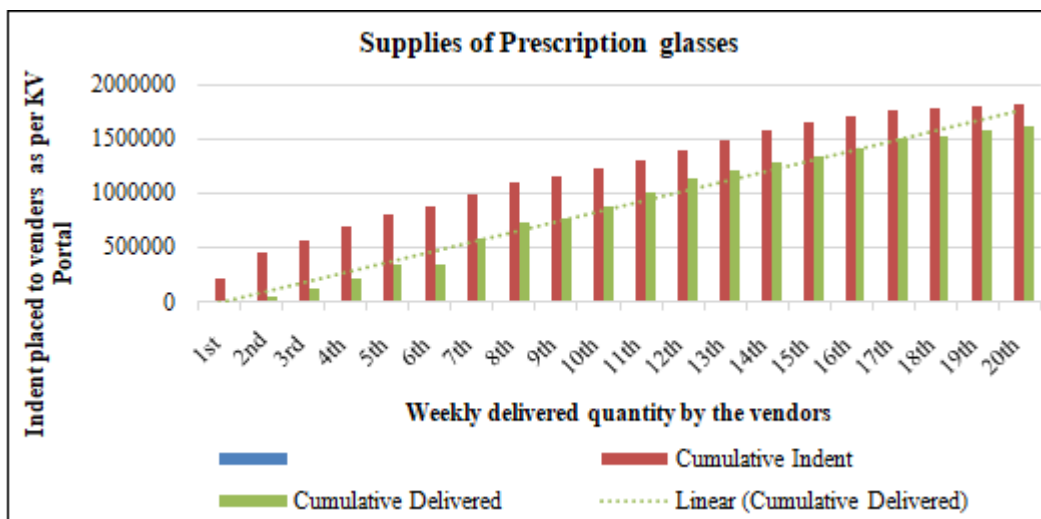


Figure 9: Supply status of Prescription glasses by 20th week

- All the prescription glasses were distributed to the beneficiaries within 3 weeks of the close of the program.
- By continuously monitoring and identifying bottlenecks, TSMSIDC came up with feasible solutions and brought down the gap in lead time from three months in 6th week to three weeks by the end of the program leading to higher customer satisfaction.

4. Distribution & IT Applications used:

The workflow of the indent and distribution process employed for prescription glasses is as follows:



Figure 10: Indent and Distribution workflow for prescription glasses

4.1. IT System for implementation and monitoring

To implement and monitor the Kanti Velugu camp effectively, an application has been developed by the health department. The application enables data entry, data analysis, data validation, and data sharing among various stakeholders. The application has features such as QR code scanning, SMS alerts, and dashboard reports.

- 1) Different IT systems modules have been developed for easy implementation and monitoring of screening and distribution.
 - CAMP Management Module
 - State Level Module
 - Vendor Module
 - MIS
 - Mobile Application
- 2) The application has been used by the medical teams, district officials, state officials, and other partners involved in the Kanti Velugu camp. The application process flow is as follows:
 - Data entry is done with 2 tabs, deployed at Step No. 3 and 5 shown in Figure-1.
 - Simple input with 13 data points (10 with Check Box), the filling of which takes around 3 minutes per beneficiary.
 - Patient will have a Hard Copy of Record
 - Wherever Reading glass is given, Photo of the beneficiary with glass is taken & uploaded.
 - Wherever follow up is required, Photo of Patient Record is taken & uploaded.
 - As shown in Figure-10, wherever Prescription Spectacles gets prescribed, data entry is done at the field level and towards the end of every day, CIO pushes the data to the vendors' login IDs.
 - Order gets populated in vendor's logins.
 - Vendors acknowledge the order, manufactures & dispatches district wise.
 - Before dispatch, the vendor pushes the data to KV application through an API software.
 - Each of the prescription glass boxes will have a sticker label on the back of the box as shown in Figure-11.
 - ANM/ASHA hands over the glasses to the beneficiary, Scans the QR Code using the mobile application, take photo & Upload.

These IT modules played a pivotal role in the program's success and has certainly helped in improving the quality, efficiency, transparency, and accountability of the programme.

4.2. QR Code labelling System:

- The identification, segregation, and distribution of prescription glasses used to be challenging during the

KV 2018 program. To overcome the same, QR code system was implemented.

- As can be seen in Figure 2, details like name, mobile number, full address of the beneficiary are printed on the spectacle box for **ease of door delivery**. A unique QR code is also printed on the box so that the data of the beneficiary can be easily retrieved while handing over the glasses.
- By implementing the above QR code based labelling system, the distribution was streamlined, and it was easy to follow on for the ground level staff for distribution.

Sample label printed on the boxes of prescription glasses by the vendors before dispatch is as follows:

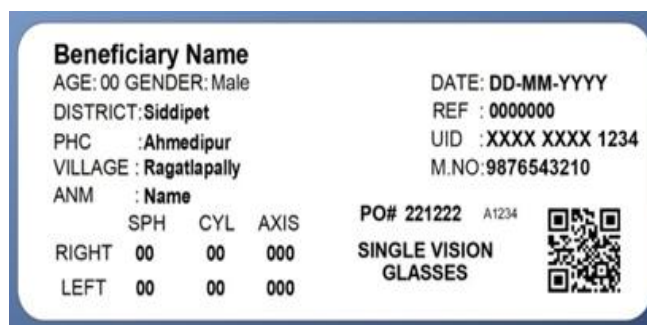


Figure 11: Sample QR Code Sticker label for prescription glass boxes

5. Cost Analysis

5.1. Methodology:

- 1) Maintenance of Autorefractometers procured during the KV 2018 program.
- 2) Procurement process for Autorefractometers, spectacles, minor items like charts and drugs.
- 3) To supply the items within the milestones and Actions implemented to Increase the supply chain of prescription glasses.
- 4) Application to track the progress by implementing QR Code.
- 5) Improvements of KV 2023 program based on lessons learnt and challenges faced during the KV 2018 program.

5.2. Expenditure towards procurement of Reading Glasses

Table 4: Reading Glasses

S. No	Name of the Firm	Item Name	Qty	Unit Rate	Amount
1	Firm-1	Reading glasses	19,52,104	80.64	15,74,17,667
2	Firm-2	Reading glasses	13,45,496	80.64	10,85,00,797
	Total				26,59,18,464

5.3. Expenditure towards procurement of Prescription Glasses

Table 5: Prescription Glasses

S. No	Name of the Firm	Item Name	Qty	Unit Rate	Amount
1	Firm-1	Prescriptionglasses	6,31,641	240.8	15,20,99,153
2	Firm-2	Prescription glasses	9,91,416	240.8	23,87,32,973
3	Empanelled Firm-1	Prescription glasses	48,890	240.8	1,17,72,712
4	Empanelled Firm-2	Prescription glasses	58,848	240.8	1,41,70,598
5	Empanelled Firm-3	Prescription glasses	49,172	240.8	1,18,40,618
6	Empanelled Firm-4	Prescription glasses	29,361	240.8	70,70,129
	Total				43,56,86,182

5.4. Expenditure towards procurement & maintenance of Autorefractometers and other equipment

Table 6: Autorefractometers and other equipment

S. No	Item Name	Qty	Amount
1	Autorefractometer	850	26,80,22,000
2	Charts and Tape	19,500	9,45,000
3	Bag, Mirror, and Torch	1500	12,07,500
4	Trail Lens and frames	1500	82,83,000
	Total		27,84,57,500

Maintenance of Autorefractometers:

After a detailed assessment during the planning phase, it was decided to assess the condition of the autorefractometers procured during Kanti Velugu 2018 program. TSMSIDC was directed to take up the servicing and repairs, if any and also to enter into CAMC agreements with service providers.

Accordingly, as per the instructions issued, TSMSIDC has brought back all the autorefractometers that were procured under KV 2018 program in the entire state to a Centralized location at TSMSIDC Store, Narayanaguda, Hyderabad, for Servicing and Repairs, if any and instructed the concerned vendors supplied during KV 2018 program, to depute their Service Engineers for the servicing and repairs, if any of Auto Refractometers from 22.11.2022 at TSMSIDC Central Stores at Narayanguda, Hyderabad and were also requested to submit CAMC proposals for entering into CAMC Agreement.

There was no proper response from some of these 2018 firms even after repeated calls. As Kanti Velugu Program 2023 was going to be inaugurated in January 2023, and as there was not enough time, an authorized service provider was requested to take up the servicing and repairs of Autorefractometers of other make and models as well.

Thus, TSMSIDC has ensured the service, repair and CAMC conclusion of Autorefractometers supplied under Kanti Velugu 2018 Program.

Once the servicing and repairs are done, the machines are shifted to the concerned locations. The firms were instructed to depute **at least two service engineers per district** in the entire state of Telangana to attend to the repairs, if any.

A Buffer stock of 25-30 machines was also kept ready at TSMSIDC Central Stores at Narayanguda, Hyderabad to meet any emergency requirements.

About **603 Nos** of Autorefractometers of 2018, which are of seven models supplied by five firms were serviced, repaired and CAMC concluded for one year costing an amount of **Rs.1,24,50,120/-**, saving an amount of **Rs.17,76,87,840/-**

5.5. Expenditure towards procurement of Standard Medicines

The following medicines were placed at camps to distribute them to beneficiaries as per the need:

Table 7: Standard Medicines

Medicine Name	Procured Qty	Procurement Value (Rs.)
HPMC 0.3o/o in 10ml eye drops (Lubricating drops)	12,00,000	₹ 2,28,48,000
Ciprofloxacin 0.3o/o Eye Drops	20,20,000	₹ 73,32,600
Prednisolone Eye Drops 1o/o in 5Ml	5,40,000	₹ 72,57,600
Paracetamol Tablets 500mg	1,08,00,000	₹ 68,04,000
VITAMIN-B COMPLEX TAB	1,62,00,000	₹ 33,12,900
Vitamin A and D Capsules	1,08,00,000	₹ 33,09,120
		₹ 5,08,64,220

5.6. IEC Material

Table 8: IEC Material

Sl. No	Item Name	Quantity	Unit Rate (incl. of GST)	Total amount (In Rs.)
1	Daily Camp Team Report	1,70,000	1.18	2,00,600
2	User Manual (Telugu)	25,000	8.50	2,12,500
3	User Manual (Urdu)	1,000	23.60	23,600
4	User Manual (English)	1,000	29.50	29,500
5	Camp Signages (11 Designs per set)	1,540	483.8	7,45,052
6	Roll Up Standees with black back front lit Flex	1,533	3186	48,84,138

Sl. No	Item Name	Quantity	Unit Rate (incl. of GST)	Total amount (In Rs.)
	(3 Designs per set)			
7	PVC Flex Banner (3 Designs per sheet)	10,000	973	97,30,000
8	Pamphlet	1,00,00,000	0.59	59,00,000
9	Household invitations Letter	1,00,00,000	0.59	59,00,000
10	Patient Guide	2,00,00,000	1.42	2,84,00,000
11	Patient Record Folder	2,00,00,000	1.35	2,70,00,000
	Total			8,30,25,390

The overall cost one incurred per person is as follows:

Table 9: Cost Analysis

Cost Analysis	Numbers	Total cost incurred	Cost incurred per head
Number of People Screened so far	1,63,00,828		
Number of Reading Glasses Handed Over	22,59,986	₹ 18,22,45,271.00	₹ 238.64
Identified for Prescription Spectacles	18,12,661	₹ 43,64,88,769.00	₹ 398.80
Issued glasses total	40,72,647		
Glasses not required	1,22,28,181	₹ 61,87,34,040.00	₹ 158.00

6. Lessons learnt and best practices of KV 2023 program:

- 1) The condition of the autorefractometers procured for the KV 2018 program was assessed.
 - a) 603 autorefractometers of seven models supplied by five firms were serviced and repaired.
 - b) TSMSIDC entered into a Comprehensive Annual Maintenance Contract (CAMC) for one year costing Rs. 1,24,50,120/-
 - c) Repairing the equipment instead of purchasing new equipment was effective, leading to cost savings of Rs. 17,76,87,840/-
- 2) In case of a breakdown during the 100 days of the program,
 - a) The firms were instructed to depute at least two service engineers per district in the entire state of Telangana to attend to the repairs.
 - b) Also, a **buffer stock** of 25-30 machines was kept ready at TSMSIDC Central Stores
- 3) **Turnaround time (TAT)** between the eye screening and the distribution of prescription glasses was planned to within 30 days. But, due to some unforeseen circumstances in the first few weeks, the requirement got held up leading to a higher TAT.
 - a) TSMSIDC visited the assembling plants and conducted time and motion analysis to assess the daily production capacity Vs the daily requirement.
 - b) TSMSIDC swiftly called for an EoI and empaneled four additional firms and eventually brought down the TAT successfully by the end of the program.
- 4) A robust **QR Code based labelling system** and a mobile application was employed during the KV 2023 program for easy identification, segregation, and distribution of prescription glasses to the beneficiaries at their doorstep.
 - a) This system improved the traceability as it enabled precise product traceability from the point of origin to the end beneficiary.
 - b) Minimized manual errors, saving time and resources while improving overall efficiency.
- 5) **IT applications** played a pivotal role in enhancing supply chain efficiency and resilience.

- a) It enabled real-time tracking and analysis of various supply chain components such as customer demand/requirement, district-wise inventory levels, etc.
- b) With continuous monitoring, TSMSIDC was able to identify bottlenecks proactively, anticipate potential disruptions, facilitate stock diversions, and promptly respond to changing demand at camps.
- 6) Kanti Velugu 2023 program promoted the essence of **“Made in India”** as all the spectacles distributed were made within the country without compromising on quality.
 - a) The program not only demonstrated a strong commitment to quality but also instilled a sense of national pride and confidence in Indian-made products.
 - b) Additionally, the program benefitted from shorter production lead times and cost savings due to the decreased transportation, further contributing to its success

7. Conclusion

Kanti Velugu Programme is a testament to the vision and potential of Telangana as a leading and one of the fastest growing states in the healthcare sector in India. TS Medical Devices Park at Sulthanpur is leading the way for **‘Made in Telangana’** as a significant number of spectacles were manufactured locally during this program.

It has become a role model for other states as many other states like **Delhi** and **Punjab** are also planning to replicate this wonderful initiative that will benefit poor people.

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- Chief Secretary

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- Commissioner, Health Medical and Family Welfare Department
- All Public Representatives
- All District Collectors
- All DMHOs and
- Every other stakeholder involved in the program.

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Appendix

Some of the abbreviations used in the paper are:

- TSMSIDC- Telangana State Medical Services and Infrastructure Development Corporation
- CHFV- Commission rate of Health and Family Welfare
- DoHMFV- Department of Health, Medical & Family Welfare
- DMHO- District Medical & Health Officer
- EoI- Expression of Interest
- GeM- Government e Marketplace
- CAMC- Comprehensive Annual Maintenance Contract
- KV- Kanti Velugu
- QC- Quality Control
- ANM- Auxiliary Nurse and Midwife
- ASHA- Accredited Social Health Activist
- MIS- Management Information System
- TAT- Turnaround Time