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 & CHFW, DoHMFW, 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 HMFW, 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 District on 15.08.2018 with a vision to build “Avoidable Blindness Free Telangana”. The program concluded in April 2019.

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

<table>
<thead>
<tr>
<th>Field Deployment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total teams</td>
<td>827</td>
<td></td>
</tr>
<tr>
<td>Medical officers</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td>Optometrists</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>Support staff</td>
<td>8200</td>
<td></td>
</tr>
<tr>
<td>Total staff across 827 teams</td>
<td>9940</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screening &amp; Glasses Distribution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Screening</td>
<td>1.56 Crores</td>
</tr>
<tr>
<td>Reading glasses distributed</td>
<td>24.68 Lakhs</td>
</tr>
<tr>
<td>Prescription glasses distributed</td>
<td>14.97 Lakhs</td>
</tr>
<tr>
<td>Total glasses distributed</td>
<td>39.65 Lakhs</td>
</tr>
</tbody>
</table>

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:

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

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

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

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

Some of the major activities that constitute the action plan are:
- Specifying the requirements
- Creation of purchase order
- Verification of purchase order
- Verification of delivery
- Payment

### 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

![Procurement process flow at TSMSIDC](image)

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

Based on the above, the daily production capacity of Firm-1 turned out to be 26,880 if it runs for 2 shifts.
Further, the production layout and capacity of Firm-2 were also assessed as shown in Figure 7 & 8

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).
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:

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:
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 logins.
   - 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 handling 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:

![Sample QR Code Sticker label for prescription glass boxes](image)

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

Figure 10: Indent and Distribution workflow for prescription glasses

Figure 11: Sample QR Code Sticker label for prescription glass boxes
5.3. Expenditure towards procurement of Prescription Glasses

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Firm</th>
<th>Item Name</th>
<th>Qty</th>
<th>Unit Rate</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Firm-1</td>
<td>Prescription glasses</td>
<td>63,1,641</td>
<td>240.8</td>
<td>15,20,99,153</td>
</tr>
<tr>
<td>2</td>
<td>Firm-2</td>
<td>Prescription glasses</td>
<td>9,9,1,416</td>
<td>240.8</td>
<td>23,8,7,32,973</td>
</tr>
<tr>
<td>3</td>
<td>Empanelled Firm-1</td>
<td>Prescription glasses</td>
<td>48,8,90</td>
<td>240.8</td>
<td>1,17,7,2,712</td>
</tr>
<tr>
<td>4</td>
<td>Empanelled Firm-2</td>
<td>Prescription glasses</td>
<td>58,8,48</td>
<td>240.8</td>
<td>1,41,70,598</td>
</tr>
<tr>
<td>5</td>
<td>Empanelled Firm-3</td>
<td>Prescription glasses</td>
<td>49,1,72</td>
<td>240.8</td>
<td>1,18,40,618</td>
</tr>
<tr>
<td>6</td>
<td>Empanelled Firm-4</td>
<td>Prescription glasses</td>
<td>29,3,61</td>
<td>240.8</td>
<td>70,70,129</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>43,56,86,182</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>S. No</th>
<th>Item Name</th>
<th>Qty</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Autorefractometer</td>
<td>850</td>
<td>26,8,0,22,000</td>
</tr>
<tr>
<td>2</td>
<td>Charts and Tape</td>
<td>19,500</td>
<td>9,4,5,000</td>
</tr>
<tr>
<td>3</td>
<td>Bag, Mirror, and Torch</td>
<td>1500</td>
<td>12,0,7,500</td>
</tr>
<tr>
<td>4</td>
<td>Trail Lens and frames</td>
<td>1500</td>
<td>82,8,5,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>27,8,4,5,7,500</strong></td>
</tr>
</tbody>
</table>

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, Narayanguda, 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>
<thead>
<tr>
<th>Medicine Name</th>
<th>Procured Qty</th>
<th>Procurement Value (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPMC 0.3/o in 10ml eye drops (Lubricating drops)</td>
<td>12,0,0,000</td>
<td>₹ 2,28,48,000</td>
</tr>
<tr>
<td>Ciprofloxacin 0.3/o Eye Drops</td>
<td>20,2,0,000</td>
<td>₹ 73,32,600</td>
</tr>
<tr>
<td>Prednisolone Eye Drops 1/o in 5ML</td>
<td>5,4,0,000</td>
<td>₹ 72,57,600</td>
</tr>
<tr>
<td>Paracetamol Tablets 500mg</td>
<td>1,0,8,0,000</td>
<td>₹ 68,04,000</td>
</tr>
<tr>
<td>VITAMIN-B COMPLEX TAB</td>
<td>1,6,2,0,000</td>
<td>₹ 33,12,900</td>
</tr>
<tr>
<td>Vitamin A and D Capsules</td>
<td>1,0,8,0,000</td>
<td>₹ 33,0,9,120</td>
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<td></td>
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<td>₹ 5,08,6,4,220</td>
</tr>
</tbody>
</table>

5.6. IEC Material

<table>
<thead>
<tr>
<th>S. No</th>
<th>Item Name</th>
<th>Quantity</th>
<th>Unit Rate (incl. of GST)</th>
<th>Total amount (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daily Camp Team Report</td>
<td>1,7,0,000</td>
<td>1.18</td>
<td>2,00,600</td>
</tr>
<tr>
<td>2</td>
<td>User Manual (Telugu)</td>
<td>25,000</td>
<td>8.50</td>
<td>2,12,500</td>
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<tr>
<td>3</td>
<td>User Manual (Urdu)</td>
<td>1,0,00</td>
<td>23.60</td>
<td>23,600</td>
</tr>
<tr>
<td>4</td>
<td>User Manual (English)</td>
<td>1,0,00</td>
<td>29.50</td>
<td>29,500</td>
</tr>
<tr>
<td>5</td>
<td>Camp Signages (11 Designs per set)</td>
<td>1,5,40</td>
<td>483.8</td>
<td>7,45,052</td>
</tr>
<tr>
<td>6</td>
<td>Roll Up Standees with black back front lit Flex</td>
<td>1,5,33</td>
<td>3186</td>
<td>48,84,138</td>
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</tbody>
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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.

Acknowledgements

TSMSIDC would like to acknowledge the contributions of the following stakeholders for their time, effort, and expertise in ensuring the successful conduct of the program for 100 days.

- Hon’ble Chief Minister
- Hon’ble Minister for Finance, Health, Medical & Family Welfare
- Chief Secretary

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

The overall cost incurred per person is as follows:

<table>
<thead>
<tr>
<th>Table 9: Cost Analysis</th>
<th>Cost Analysis</th>
<th>Numbers</th>
<th>Total cost incurred</th>
<th>Cost incurred per head</th>
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<tbody>
<tr>
<td>Number of People Screened so far</td>
<td>1,63,00,828</td>
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<td>₹ 18,22,45,271.00</td>
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<tr>
<td>Number of Reading Glasses Handed Over</td>
<td>22,59,986</td>
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<td>₹ 43,64,88,769.00</td>
<td>₹ 398.80</td>
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<tr>
<td>Issued glasses total</td>
<td>40,72,647</td>
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<td>₹ 61,87,34,040.00</td>
<td>₹ 158.00</td>
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<tr>
<td>Glasses not required</td>
<td>1,22,28,181</td>
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<td>₹ 1,35,64,828.00</td>
<td>₹ 618.00</td>
</tr>
</tbody>
</table>
Secretary to Government, Health Medical and Family Welfare Department
Commissioner, Health Medical and Family Welfare Department
All Public Representatives
All District Collectors
All DMHOs and
Every other stakeholder involved in the program.

References

[3] The Medical Checkup Book (DK Medical Care Guides), by DK (Author).

Appendix
Some of the abbreviations used in the paper are:

- TSMSIDC- Telangana State Medical Services and Infrastructure Development Corporation
- CHFW- Commissioner of Health and Family Welfare
- DoHMFW- 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