Scorecard - An Innovative Simplified Tool to Supplement the Existing Monitoring Mechanism to Assess and Improve Performance of Antiretroviral Treatment Centers

Sudhir Chawla¹, Bhautik Modi², Bharat Bhusan Rewari³, Pramod B Verma⁴, Sonia Chetandas Chhabra⁴
¹Gujarat State AIDS Control Society, Ahmedabad, ²Department of Community Medicine, GMERS Medical College, Gandhinagar, Gujarat, ³WHO Country Office, New Delhi, ⁴Casualty Medical Officer, GMERS Medical College and Hospital, Sola, Ahmedabad, Gujarat, India

Abstract

Introduction: All 26 antiretroviral treatment (ART) centers of Gujarat were monitored by Gujarat State AIDS Control Society under the National AIDS Control Program. A comprehensive tool is needed to identify gap in service delivery and to prioritize monitoring visits. Objectives: To supplement the existing monitoring system, identify strengths/weakness of ART centers, and give recommendations. Methodology: Scorecard was developed in spreadsheet format with 17 scoring indicators on monthly base from March 2014 onward. The centers were classified in three color zones: green (score ≥80%), yellow (score <80% and ≥50%), and red (score <50%). Visits were prioritized at centers with more indicators in yellow/red zone. The performance of centers was compared for March 2014 and March 2015. Results: The statistically significant improvement was observed in indicator “ART initiation within 2 months of eligibility,” while after removing red zone from analysis, four more indicators named “eligible patients transferred out before ART initiation, general clients started on ART, antenatal women started on ART, and pre-ART follow-up CD4 done” reflect statistically significant improvement. Quadrant analysis was done for some indicators, which provide insight that less number of eligible patients may be a reason for low initiation of ART at one center, and at four other centers, the possible reasons for low retention are high death rate and high lost to follow-up rate. Based on these findings, the recommendations were made to regular mentoring centers, improve coordination between ART center and care and support centers (CSCs), and conduct verbal autopsy. Conclusion: Scorecard is a simple and cost-effective tool for monitoring, and by highlighting low-performing indicators, it helps in improving quality of services provided at ART centers.

Keywords: CD4, color zone, early warning indicators, monthly progress reports, WHO

Introduction

The National AIDS Control Program Phase IV in the state of Gujarat is being implemented by Gujarat State AIDS Control Society (GSACS). The care, support, and treatment division of GSACS is responsible for monitoring of all 26 antiretroviral treatment (ART) centers in the state of Gujarat.[1,2] The National AIDS Control Organization (NACO) has designed a set of monitoring and evaluation tools to ensure uniformity in recording and reporting of patient data. These tools include different type of registers and standardized monthly reporting formats from ART centers.[3,4] The NACO recommends that each ART center should be visited at least once in every quarter by state level officials.[11] Looking at the number of centers and geographical distribution of centers, it is not feasible to do on-site monitoring as recommended. Hence, a need was felt to have a comprehensive tool for monitoring of ART centers to identify gaps in service delivery and to prioritize on-site monitoring visits.

This scorecard was developed to monitor centers for all indicators every month so that based on scoring, visits can be planned for centers which are not functioning optimally.

Address for correspondence: Dr. Sudhir Chawla, 304, Parshwanthah Metrocity, T.P. 44, Near H. B. Kapadiya School, Chandkheda, Ahmedabad - 382 424, Gujarat, India.
E-mail: drsudhirchawla74@gmail.com

How to cite this article: Chawla S, Modi B, Rewari BB, Verma PB, Chhabra SC. Scorecard - An innovative simplified tool to supplement the existing monitoring mechanism to assess and improve performance of antiretroviral treatment centers. Indian J Community Med 2017;42:163-6.

Received: 19-09-16, Accepted: 19-04-17
By regular monitoring, a distance mentoring can also be provided for low-performing indicators so as to ensure that performance of all ART center is improved on all indicators.

**Objective**

1. To supplement the existing monitoring system in reviewing performance of ART centers against key program indicators over a period of time
2. To identify strengths and weaknesses of ART centers
3. To identify gaps for timely interventions and provide recommendations for corrective measures.

**Methodology**

Study population: There were 27 ART centers in Gujarat, a state in Western India. Till March 2014, 26 ART centers were functional and one of the centers (ART Center, Vyara) was started in November 2014 only, so it was not included in indicator scoring. All other centers were enrolled in the study. Scoring was done based on monthly reports received from all 26 centers.

Study period: Study was done for performance during the period March 2014–2015.

Study design: A prospective study design was used.

A scorecard was developed by the investigators after extensive review of literature and with suggestions from subject experts in a spreadsheet format that captured core performance indicators from the ART centers.

Scorecard covered 17 scoring indicators and 8 nonscoring indicators collected from formats currently used by ART centers, for reporting on monthly basis within the state. The ART centers were classified into three color zones, namely, green [score ≥80%], yellow [score <80% and ≥50%], and red [score <50%] based on performance and scoring for the particular indicator. The other SACS level report and monthly progress reports (MPRs) received from ART centers were the source of this scorecard data. The data were taken from April till the reporting month of financial year for some of the indicators while it was cumulative since inception till the reporting month for other indicators. The maximum weightage and class interval criteria of a particular indicator were decided after consultation with subject expert based on field experience and importance of the indicator under program.[6]

The criteria used to classify ART centers in three zones were different for each indicator which were as follows:

WHO early warning indicators and quality care indicators,[7-9] national and state level averages of these indicators, national targets under program, annual variations, and state-specific limitations in terms of logistics. Based on scorecard, on-site visits were planned on priority for ART centers in yellow and red zones. Permission from the NACO and GSACS was obtained for conducting this study.

**Results**

Baseline scorecard was prepared for all ART centers in March 2014 from monthly reports and same shared with all ART centers in April 2014. Thereafter, regular monitoring of all centers was started with the help of monthly scorecard. Based on scoring in baseline March 2014 and in subsequent months, the mentoring visits were planned during the study period to ART centers having higher number of indicators in yellow or red zones. The performance of centers was evaluated again in March 2015 on the scorecard. The performance of all ART centers in March 2014 was compared with March 2015 performance. The results are described below.

Improvement was observed in all 17 scoring indicators, but it was not statistical significant in many indicators. Statistically significant improvement was observed in one major indicator, ART initiation within 2 months of eligibility, which has improved significantly from red to yellow zone [Table 1].

As there was no center in red zone for most of the indicators, the analysis was further narrowed down by removing red zone for calculation of P value; four more indicators were found with significant improvement from yellow to green zone. These indicators were eligible patients transferred out before ART initiation, eligible patients started on ART (general clients), antenatal/breastfeeding women started on ART, and pre-ART follow-up CD4 done.

To understand strength and weakness of individual ART center, quadrant analysis was done with the help of different indicators. First quadrant analysis was done between eligible people living with HIV/AIDS (PLHA) for ART versus PLHA actually initiated on ART in March 2015. It is evident from Graph 1 that most of the centers were having high percentage of eligible people living with HIV (PLHIV) initiated on ART, except one center. To further understand the outcome of those initiated on ART, a quadrant analysis was done between indicators PLHA initiated on ART and PLHA retained in care. Most of the centers were having high initiation on ART and
high retention rate, except four centers. To understand the possible reasons, two more quadrant Graphs 2 and 3 were made. By quadrant analysis, retention in care was compared with on ART lost to follow-up (LFU) in Graph 2 and with on ART death in Graph 3. Out of four centers which were having low retention, high LFU rate was the reason for lower retention in three centers. All four centers which had low retention rates, high death rate was also one of the reasons for low retention.

**DISCUSSION**

It was observed from available data of ART centers in Gujarat that there is a gap between PLHIVs eligible for ART and initiated on ART. To understand possible reasons behind this gap, some indicators such as eligible patient defaulted, under process for ART initiation, opted out of program, transferred out, and died before ART initiation were included in the scorecard, which are affecting the score of eligible patients started on ART. With the analysis of scoring over 1 year, it was noted that one of the reasons behind this gap was eligible patients being transferred out from one center to another even before ART initiation. Hence, a transfer out policy was developed along with regular monitoring of this indicator in the scorecard. At the end of 1 year, significant improvement on this indicator was observed. This was not being reflected in the standardized longitudinal observation from MPR of ART centers. Thus, scorecard helped us to improve this important indicator.

According to citizen charter, ART should be initiated within 2 months of eligibility for ARV drug. Hence, this indicator was included in scorecard to closely monitor ART initiation. This indicator is a part of MPR but scorecard helped to pinpoint the low-performing center and work upon them. Thus, using scorecard, significant improvement in this important indicator was made possible.

All patients registered in ART center required to undergo baseline CD4 testing and those not eligible for ART currently are followed up in pre-ART care regularly to ascertain the well-being and their eligibility of ART at the earliest. These patients undergo periodic CD4 testing. This indicator of follow-up CD4 tests in pre-ART care is not included in MPR, but this indicator is vital to find the quality of service provided.

![Graph 2: Quadrant analysis of retention in care versus on antiretroviral treatment lost to follow-up](image)

**Table 1: Comparison of number (%) of centers in different color zones before and after 1 year of scorecard (n=26)**

| Indicator                        | Scorecard month | March 14 | March 15 | P       |
|----------------------------------|----------------|----------|----------|---------|
| ART initiation within 2 months of eligibility | Green zone (%) | 7 (26.92) | 9 (34.62) | 0.001   |
|                                 | Yellow zone (%) | 4 (15.38) | 14 (53.85) |         |
|                                 | Red zone (%)    | 15 (57.69) | 3 (11.54)  |         |

As there was no center in red zone for most of the indicators, the analysis was further narrowed down by removing red zone.

| Indicator                        | Scorecard month | Green zone (%) | Yellow zone (%) | P (mid P exact)         |
|----------------------------------|----------------|---------------|----------------|------------------------|
| Eligible transferred out          | March 14       | 16 (61.54)    | 6 (23.08)      | 0.003040               |
|                                 | March 15       | 26 (100)      | 0              |                        |
| Eligible started on ART (general) | March 14       | 18 (69.23)    | 6 (23.08)      | 0.05887                |
|                                 | March 15       | 24 (92.31)    | 2 (7.69)       |                        |
| ANC started on ART               | March 14       | 20 (80)       | 5 (20)         | 0.01131                |
|                                 | March 15       | 26 (100)      | 0              |                        |
| Pre-ART follow-up CD4 due        | March 14       | 18 (69.23)    | 5 (19.23)      | 0.03850                |
|                                 | March 15       | 25 (96.15)    | 1 (3.85)       |                        |

ART: Antiretroviral treatment, ANC: Antenatal care
to patients in pre-ART care. Hence, this indicator was included in scorecard, and significant improvement on this indicator was seen by constant monitoring by scorecard and necessary guidance to centers not performing well on this indicator.

Eligible patients started on ART and Anti-natal/breastfeeding women initiated on ART are included in MPR. However, to closely monitor and to plug the gaps, these indicators was included in the scorecard, and it was observed that only two centers were in red zone on this account in March 2014 and both improved in March 2015 for eligible patients started on ART, while for indicator ANC/breastfeeding women initiated on ART, there was no center in red zone even in March 2014. Hence, green and yellow zones were compared and found statistically significant result for both the indicators.

With the use of scorecard and prepared quadrant graph, it was seen that the possible reason for poor retention at four ART centers was high LFU and high death rate which needs to be further explored. In this way, scorecard was used to find possible reasons for poor performance and guidance on necessary steps to improve the performance.

Scorecard provides a simple and important tool of monitoring and helps in improving quality of monitoring by maximizing output in less time by pinpointing poor-performing indicators and giving more emphasis on them. It may be center specific and limited to a particular month; hence, for understanding actual problem, mentoring visits need to be done to low-performing centers and corrective measures have to be taken by ART center staff. The constant monitoring and corrective steps at ART center level will help in improvement in performance. This proves a cost-effective way of monitoring the important indicators of the program. This will ultimately help to reduce linkage loss at various steps of retention cascade and even beyond. This can also be replicated at national level without additional burden on ART center staff. This scorecard was later included as best practices document by the NACO and the regional progress report of the WHO South-East Asia Region. The GSACS now uses this scorecard regularly for distance monitoring through telemedicine also.

**Recommendations**

Based on these findings, following recommendations were made to plug these gaps, which were as follows:

1. Regular mentoring is required to ensure timely ART initiation in eligible patients at ART center with low performance on this indicator
2. Verbal autopsy needs to be done, to explore the possible reasons behind high death rate
3. Coordination between ART center and CSC needs to be strengthened to reduce the LFU rate at identified centers. The joint mentoring visits of GSACS and Vihaan project officials were also planned on priority for these centers
4. Analyze scorecard on quarterly basis and compare performance of one quarter with same quarter in subsequent years.

**Conclusion**

Score-card is a simple and cost-effective tool for monitoring. By highlighting low performing indicators it helps in improving quality of services provided at ART Centre. The Score Card can be replicated at National Level as a cost-effective tool for monitoring of ART Centres.

**Acknowledgment**

We acknowledge National AIDS Control Organization and Project Director of Gujarat State AIDS Control Society for giving us opportunity for implementing this innovative tool. The authors are thankful to the staff of the antiretroviral treatment (ART) centers of Gujarat state, especially Mr. Manish Bhura, data manager of ART centers, G.G. Hospital Jamnagar, for data collection, compilation and preparation of scorecard.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Gujarati State AIDS Control Society; 2016. Available from: http://www.gSacsonline.org/index.php/about-us/introduction. [Last accessed on 2016 Feb 17].
2. National AIDS Control Programme: Phase IV (2012-2017)- Strategy Document. Department of AIDS Control, Ministry of Health and Family Welfare, Government of India. New Delhi; 2010. Available from: http://www.naco.gov.in/upload/NACP-IV/NACP-IVStrategyDocument.pdf. [Last accessed on 2016 Feb 17].
3. National AIDS Control Programme: Car, Support and Treatment Division-operational Guidelines for ART Services. Available from: http://www.naco.gov.in/sites/default/files/Operational%20guidelines%20for%20ART%20services.pdf. [Last cited on 2016 Feb 17].
4. NACO. National AIDS Control Programme: Training Module on Monitoring and Evaluation Tools for Anti Retroviral Treatment Facilities; December, 2013.
5. Gujarati State AIDS Control Society. Annual Report: 2013-2014, National AIDS Control Programme Phase – IV. Ahmedabad; 2014. Available from: http://www.gSacsonline.org/images/Reports/AR_2013_14.pdf. [Last cited on 2016 Feb 17].
6. Gujarati State AIDS Control Society. CST Score Card Source, Scope and Criteria. Available from: http://www.gSacsonline.org/images/CST/Score_Card_Toolmonitor_ART_performance.pdf. [Last cited on 2017 Apr 19].
7. NACO. Document for Training on Early Warning Indicators of HIV Drug Resistance and Quality of Care Indicators in ART Programme October, 2014. New Delhi; 2014.
8. World Health Organization. World Health Organization Global Strategy for The Surveillance and Monitoring of HIV Drug Resistance. Geneva, Switzerland: World Health Organization; 2012. Available from: http://wwwapps.who.int/iris/bitstream/10665/77349/1/9789241504768_eng.pdf. [Last cited on 2016 Feb 17].
9. NACO. Core Indicators for Monitoring and Evaluation National AIDS Control Programme – Phase III; August, 2007. Available from: http://www.naco.gov.in/sites/default/files/Core%20Indicators%20for%20Monitoring%20%20Evaluation.pdf. [Last cited on 2016 Feb 17].
10. National AIDS Control Organisation. Citizens and Clients Charters; 2013-2014. Available from: http://www.naco.gov.in/NACP-IV2/Citizens_Clients_Charter/. [Last cited on 2016 Feb 17].