



**Strategic Information Management System
for
National AIDS Control Organisation,
Ministry of Health and Family Welfare,
Government of India**

CLIENT: National AIDS Control Organisation, Ministry of Health and Family Welfare,
Government of India

The National AIDS Control Organisation is a division of the Ministry of Health and Family Welfare that provides leadership to HIV/AIDS control programme in India through 35 HIV/AIDS Prevention and Control Societies. Over the years, the HIV/AIDS epidemic has moved from urban to rural India, largely affecting youth. About 2.5 million people in India, aged between 15 and 49, are estimated to be living with HIV/AIDS, the third largest in the world. Its prevalence rate in the country is 0.36 percent.

The National AIDS Control Programme (NACP) was established in 1986-87 to work towards HIV prevention and control interventions. It is in its third phase of activity. In Phase III, NACO seeks to systematically scale up the service delivery. India through its National AIDS Control Program stands committed to Millennium Development Goal (MDG) of reversing the spread of HIV/ AIDS by 2015. The decentralized model for management of NACP III requires a robust and responsive system of collecting and analyzing data.

OBJECTIVE

The National AIDS Control Organisation (NACO) required an MIS to monitor, evaluate and analyse the efficacy of various schemes launched to control the spread of the disease. Vayam's web-based SIMS deployed various tools to collect data from the grassroots level across India and to analyse and report the same using SAS Enterprise Intelligence Platform integrated with GIS technologies.

Vayam developed a single-point entry route for all field data and a centralised repository of all physical and financial information of this programme, along with a routine tracking of targets through the collection of data on inputs, processes, outputs, and outcomes. Vayam has developed NACO's web-based Strategic Information Management System (SIMS) at national and state levels, for strategic planning, monitoring, evaluation, surveillance and research in the effective tracking of and response to HIV cases. The system empowers programme officers and facilitates quick and efficient flow of information starting from the facility-level, and going up to the district and state levels, to the centre. Further, this system provides an array of discerning tools for advanced data analysis, reporting, monitoring, evaluation, GIS integration and overall program management.

Scope of the Proposed System – SIMS Overview

The SIMS (Strategic Information Management System) solution is a web based integrated monitoring and evaluation system covering the following components:

- **Data Entry Application**

The application provides web enabled browser-based interface to the end user at each level and aims to provide the following features:

- Online and Offline Data Entry
- Data Consolidation/Aggregation
- Reporting and Analysis
- Data Integrity and Consistency
- Scalability
- Audit Trails

- **Data Integration**

The Data from various sources has been integrated. The detailed methodologies have been worked out in the system design phase.

- **Data Migration**

The data after year 2001 has been migrated from the CMIS System to SIMS. The quality of data has been determined by taking samples from the various reporting components.

- **Data Warehouse**

The Data Warehouse solution conceptualizes each module (Input Formats such as Blood Bank, ICTC-Integrated Counseling and testing centre) identified in the scope section as a logical data warehouse. The logical separation of the data warehouse makes the design of the data model and the associated ETL (Extract Transform Load) and the reporting layer modular.

- **Reports upon BI Solution**

The data warehouse has been modeled using Dimensional Modeling technique which has simplified the database and has been effective for reporting. The DW/BI Solution will aim to cover the following components

- Extract Transform Load
- Creation of Data Marts
- Creation of Cubes (Logical Representation of Data Marts)
- Creation of Reporting, Dashboard and KPI's
- GIS (Geographical Information System)

The GIS has provided Evidence to track the progression of epidemic with respect to Demographic characteristics. The GIS functionality aims at providing the following features:

- GIS Mapping of different State, Districts & Periphery Units which will allow the end user to drill down to the Periphery centre details.

- Portal facility would provide Interactive Data for each level
- (NACO, State, District, Reporting Unit)

CHALLENGES

- Data Integrity and Consistency:
- Resources utilized towards data compilation rather than Intelligent analysis.
- In-effective M&E of various projects and programs of the Ministry
- Statutory Reports / Parliament Questions manually prepared
- Lack of Root-Cause Analysis
- Delayed Decision-making

SOLUTION OFFERED

Using SAS Enterprise Intelligence Platform, for successful implementation of an intelligent information system, Vayam performed the following tasks:

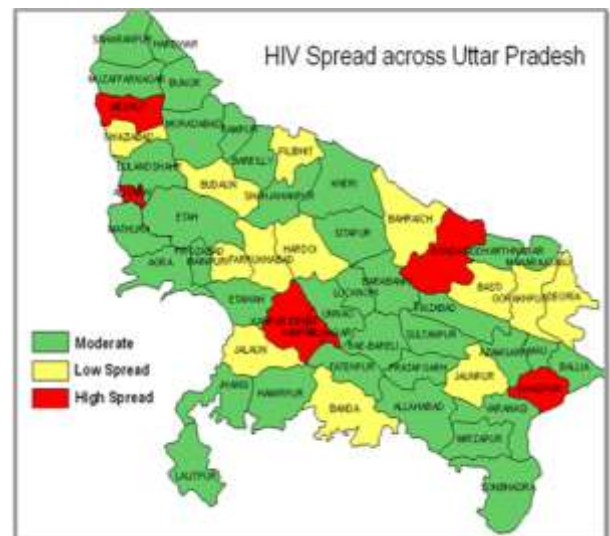
- Study Phase
- Installation and commissioning of software and hardware
- System implementations
 - Legacy data migration
 - Web base data entry application
 - Analytical intelligence and reporting solution
- Training
- Post implementation support

Geo - Spatial Analysis

- Select and identify region
- Filter by value, Filter by region
- Filter and rank
- Create calculated measures

GIS Web Application Functionality

- Pan and zoom
- Drill-up/Drill-down
- Expand/Collapse
- Bookmark—save and return
- Query & Search
- Edit over Web Functionality
- Synchronized OLAP and GIS map data exploration



TECHNOLOGY

- Web based custom application on .Net Framework 3.0
- SAS 9.2 for Statistical Analysis and Reporting
 - SAS Enterprise Business Intelligence Server
 - SAS Data Integration
 - SAS Web Report Studio
 - SAS Management Console
 - SAS Enterprise Guide (Client)
- Websphere Application Server
- SQL Server 2008
- Windows Server 2008
- SharePoint 2010

BENEFITS TO THE CLIENT

- Single-point entry route for all field data
- A centralized repository of all physical and financial information of the program
- Routine tracking of service and programme achievements against targets through collection of data on inputs, processes, outputs, and outcomes.
- Episodic assessment of effectiveness, and at the highest level the assessment of impact
- Surveillance/routine tracking helps describe the epidemic and its spread, current trends and predictions for targeting needed prevention programmes.
- Review of key indicators, allowing states to identify districts which are particularly vulnerable to HIV and which appear to have difficulties in implementing programmes effectively
- Causal Analysis/Root Cause Analysis
- Ability to take corrective action based on socio-economic indicators
- Effective and Timely transfer for Ad-hoc reporting on RTI, Parliament questions, etc.

OUR APPROACH

- We trained more than 10,000 people
- We provided user hand holding of application for 6 months at 60 locations pan India

REPLICATION

The same application may be replicated for Monitoring & Evaluation, mapping of Vector-borne diseases, integrated health management, etc.