REPORT OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

on

GENERAL AND SOCIAL SECTOR

for the year ended March 2014

GOVERNMENT OF KERALA

Report No. 2 of the year 2015

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APPENDICES

PREFACE

This Report of the Comptroller and Auditor General of India for the year ended 31 March 2014 has been prepared for submission to the Governor of Kerala under Article 151 of the Constitution for being laid before the State Legislature.

The report contains significant results of the performance audit and compliance audit of the Departments and Autonomous Bodies of Departments of the Government of Kerala under the General and Social Services including Departments of General Education, Health and Family Welfare, Industries and Information Technology, Housing, Labour and Skills, Cultural Affairs, Higher Education, Scheduled Castes Development and Water Resources.

The instances mentioned in this report are those, which came to notice in the course of test audit for the period 2013-14 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports, instances relating to period subsequent to 2013-14 have also been included, wherever found necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

INTRODUCTION

CHAPTER I
INTRODUCTION

1.1 About this Report

This Report of the Comptroller and Auditor General of India (C&AG) relates to matters arising from performance audit of selected programmes and activities and compliance audit of Government departments and autonomous bodies.

Compliance audit refers to examination of transactions relating to expenditure of the audited entities to ascertain whether the provisions of the Constitution of India, applicable laws, rules, regulations and various orders and instructions issued by the competent authorities are being complied with. On the other hand, performance audit, besides compliance audit, also includes examination of whether the objectives of the programme/activity/department are achieved economically, efficiently and effectively.

The primary purpose of the report is to bring to the notice of the State Legislature important results of audit. The findings of audit are expected to enable the executive to take corrective actions as also to frame policies and directives that will lead to improved financial management of the organisations, thus, contributing to better governance.

This chapter, in addition to explaining the planning and extent of audit, provides a synopsis of the significant deficiencies and achievements in implementation of selected schemes, significant audit observations made during compliance audit and follow-up on previous Audit Reports.

1.2 Profile of units under audit jurisdiction

There were 41 departments in the State at Secretariat level during 2013-14. The Principal Accountant General (General & Social Sector Audit), Kerala conducts audit of 23 Secretariat departments, all Public Sector Undertakings/Autonomous bodies thereunder and Local Self-Government Institutions in the State. The departments are headed by Additional Chief Secretaries/Principal Secretaries/Secretaries, who are assisted by Directors/Commissioners and subordinate officers under them. The remaining 18[1] departments are audited by Accountant General (Economic & Revenue Sector Audit).

The comparative position of expenditure incurred by the Government during the year 2013-14 and in the preceding two years is given in **Table 1.1:**

[1] Three departments included under AG (E&RSA) namely Public Works, Revenue and Water Resources are audited by PAG (G&SSA) also

Table 1.1: Comparative position of expenditure

(₹ in crore)

Disbursements	2011-12			2012-13			2013-14		
	Plan	Non plan	Total	Plan	Non Plan	Total	Plan	Non Plan	Total
Revenue Expenditure									
General Services	72.98	20227.04	20300.02	68.58	22718.03	22786.61	126.65	26478.44	26605.09
Social Services	3401.92	12821.94	16223.86	4312.02	14565.47	18877.49	4645.93	16333.95	20979.88
Economic Services	1852.31	4279.35	6131.66	2468.73	5339.69	7808.42	2301.08	5627.98	7929.06
Grants-in-aid and Contributions	-	3389.08	3389.08	-	4016.22	4016.22	-	4971.47	4971.47
Total	**5327.21**	**40717.41**	**46044.62**	**6849.33**	**46639.41**	**53488.74**	**7073.66**	**53411.84**	**60485.50**
Capital Expenditure									
Capital outlay	3398.10	454.82	3852.92	3465.66	1137.63	4603.29	3497.62	796.71	4294.33
Loans and advances disbursed	416.68	581.86	998.54	603.09	533.06	1136.15	537.53	926.64	1464.17
Repayment of public debt	-	-	2893.06	-	-	2804.08	-	-	3244.81
Contingency Fund	-	-	20.80	-	-	-	-	-	67.39
Public Account disbursements	-	-	91200.26	-	-	100455.82	-	-	120992.20
Total			**98965.58**			**108999.34**			**130062.90**
Grand Total			**145010.20**			**162488.08**			**190548.40**

1.3 Authority for Audit

The authority for audit by the C&AG is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 (C&AG's (DPC) Act). C&AG conducts audit of expenditure of the departments of the Government of Kerala under Section 13 of the C&AG's (DPC) Act. C&AG is the sole auditor in respect of 21 autonomous bodies in the General and Social Sector which are audited under Sections 19(2), 19(3) and 20(1) of the C&AG's (DPC) Act. In addition, C&AG also conducts audit of 183 Autonomous Bodies which are substantially funded by the Government under Section 14 and 15 of the C&AG's (DPC) Act. There are also 748 institutions[2], 18 Public Sector Undertakings, Buildings Divisions of the Public Works Department and 1209 Local Self-Government Institutions[3] under the audit jurisdiction in the General and Social Sector. Principles and methodologies for various audits are prescribed in the Auditing Standards and the Regulations on Audit and Accounts, 2007 issued by the C&AG.

[2] Government-aided Colleges: 158
Government-aided Higher Secondary Schools: 464
Government-aided Vocational Higher Secondary Schools: 126

[3] Grama Panchayaths: 978, Block Panchayaths: 152, District Panchayaths: 14, Municipal Corporation: 5 and Municipalities: 60

1.4 Organisational structure of the Office of the Principal Accountant General (G&SSA)

Under the directions of the C&AG, the Office of the Principal Accountant General (General & Social Sector Audit) Kerala conducts audit of Government Departments/Offices/Autonomous Bodies/Institutions under the General and Social Sector which are spread all over the State. The Principal Accountant General (General & Social Sector Audit) is assisted by four Deputy Accountants General.

1.5 Planning and conduct of Audit

The audit process starts with the assessment of risks faced by various departments of Government based on expenditure incurred, criticality/complexity of activities, level of delegated financial powers, assessment of overall internal controls and concerns of stakeholders. Previous audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of audit are decided.

After completion of audit of each unit, Inspection Reports containing audit findings are issued to the heads of the departments. The departments are requested to furnish replies to the audit findings within four weeks from the date of receipt of the Inspection Reports. Whenever replies are received, audit findings are either settled or further action for compliance is advised. The important audit observations arising out of these Inspection Reports are processed for inclusion in the Audit Reports, which are submitted to the Governor of State under Article 151 of the Constitution of India.

During 2013-14, 12,219 party-days were used to carry out audit of 1,760 units (compliance audits and performance audits) of the various departments/ organisations coming under Principal Accountant General (G&SSA). The audit plan covered those units/entities which were vulnerable to significant risks as per our assessment.

1.6 Significant Audit Observations

1.6.1 Performance audits of programmes/activities/departments

Three performance audits on Sarva Shiksha Abhiyan, Kerala, Indian System of Medicine - Ayurveda and Information System Review on 'FRIENDS, an e-Governance Initiative of Government of Kerala' are included in Chapter II, III and IV. The highlights are given in the following paragraphs.

1.6.1.1 Sarva Shiksha Abhiyan, Kerala

Sarva Shiksha Abhiyan is a flagship programme of the Government of India (GOI) launched in the year 2000-01. In Kerala, the implementation of the programme was started in 2002-03**.** This comprehensive programme is being implemented with the objectives of universal access and retention, bridging of gender and social category gaps in education and enhancement of learning levels of children in the 6 to 14 age

group. SSA also focussed on providing Inclusive Education to all Children With Special Needs (CWSN) in schools. SSA ensures that every child with special needs, irrespective of the kind, category and degree of disability, is provided quality inclusive education. The programme also aimed at identification of Out of School Children (OOSC) and developing context specific strategy to provide special training for them. The programme seeks to open new schools and construction of additional classrooms, toilets and drinking water facilities to strengthen existing school infrastructure. It envisages enhancing the capacity of teachers by providing periodic teacher training and through academic resource support. It also provides text books and support for learning achievement. After the enactment of the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act, 2009), the SSA framework for implementation was revised to align various provisions under SSA with the legally mandated norms, standards and free entitlements mandated by the Act.

SSAK did not possess reliable data on OOSC. Out of 128 OOSC surveyed by Audit, 100 belonged to ST and SC communities. SSAK reckoned the number of children as CWSN without proper assessment. SSAK did not ensure delivery of adequate support services required by CWSN. Deployment of Resource Teachers (RTs) was not related to the number of CWSN and the nature of their disability. There was a disproportionately large number of RTs trained to deal with Mental Retardation (MR) with no/few RTs trained in tackling Learning Disability and Autism, visual impairment and hearing speech impairment. RTs did not utilise even one third of school working days to visit schools and provide resource support to CWSN. Fourteen Multi Grade Learning Centres having 174 children (2013-14) were functioning in Thiruvananthapuram District even though there were schools within reasonable distance. Evaluation of learning levels of children conducted by SCERT at the instance of audit revealed poor learning levels of children. Deployment of Block Resource Persons without adhering to norms and lack of adequate on-site support by Cluster Resource Centre Coordinators led to inadequate academic support to teachers.

(Chapter II)

1.6.1.2 Indian System of Medicine – Ayurveda

Ayurveda means "the science of life" (in Sanskrit '*ayur*' means "life" and '*veda*' means "science"). Ayurveda is an ancient and comprehensive system of health care. The system aims to prevent illness¸ heal the sick and preserve life. Ayurveda has its origins in India and extended its wings to various parts of the world. Ayurveda was divided into eight clinical specialities such as *Kayachikitsa* (internal medicine), *Salya Tantra* (surgery), *Salakya* (disease of supra-clavicular origin[4]), *Kaumarabhrtya* (paediatrics, obstetrics and gynaecology), *Bhutavidya* (psychiatry), *Agada Tantra* (toxicology), *Rasayana Tantra* (rejuvenation and

[4] This branch deals with dentistry, disease of ear, nose, throat, head and oral cavity

geriatrics) and *Vajikarana* (aphrodisiology and eugenics[5]). 'Ayurveda Massage' is part of the treatment protocol.

Failure to furnish Utilisation Certificates to Government of India (GOI) for funds already received resulted in the State losing GOI assistance of ₹12.75 crore receivable during 2012-14. New departments for Preventive Ayurveda, Yoga, Naturopathy and Vishachikitsa in Government Ayurveda College, Thiruvananthapuram were not setup resulting in refund of GOI assistance of ₹1.50 crore in May 2013. Inadequacies in infrastructure facilities, non-availability of equipment and inadequate number of Medical Officers and Paramedical staff were noticed in the hospitals and dispensaries test checked. In the Government Ayurveda Hospital, Punnapra due to absence of male Nurses/Therapists and Cook, the hospital neither provided therapy treatment to male patients nor provided diet to its patients. The hospital had the lowest bed occupancy of 33 *per cent* out of 14 test checked hospitals. In seven test checked hospitals, there was no heating facility in the therapy/treatment rooms forcing patients to bring fuel and stove for heating *Thailam* for oil massage. Oushadhi, the Government of Kerala Company, did not test the Ayurveda drugs for presence of heavy metals, aflatoxin, toxicity and pesticide residue before supplying to institutions. Indents for purchase of drugs were prepared by the Department of ISM without assessing the consolidated annual requirement resulting in overstocking of drugs. The Patent Cell did not acquire patent rights for any of the 2505 *oushadha* formulations it deciphered from manuscripts.

(Chapter III)

1.6.1.3 Information System Review on 'FRIENDS, an e-Governance Initiative of Government of Kerala'

FRIENDS (Fast Reliable Instant Efficient Network for Disbursement of Services), a key mission mode e-Governance (G2C) initiative of Government of Kerala and a joint venture of the Department of Information Technology (IT) and Local Self Government Institutions (LSGI), was started as a pilot project in the year 2000 in Thiruvananthapuram district (FRIENDS Janasevanakendram). This application provided facilities to the residents of Kerala State to pay their utility bills, tax and other dues to Government through a single window integrated remittance centre, without any extra cost. It was rolled out to the remaining 13 districts of Kerala by 2001.

The application was developed without preparing User Requirement Specification (URS). Even though envisaged to be an automated system, non-adherence to database normalisation principles, poor system design and inadequate capturing of vital data necessitated manual intervention, which led to control failures and embezzlement of money. There were persistent delays in remittance of money collected from the FRIENDS Centres to Bank. The accumulated amount of money kept out of public exchequer was ₹15.21 crore and ₹11 crore at Ernakulam and Kozhikode Centres respectively. The total accumulated amount of money resided

[5] This branch deals with the means of enhancing sexual vitality and efficiency for producing healthy and ideal progeny

out of public exchequer from all the Centres was ₹136.02 crore. Non-constitution of IT steering committee led to design of the system without proper vision and focus. The application was not upgraded in line with the technological advancements in the external environment. No norms were fixed for the time required for completing a transaction resulting in large variation in the number of transaction of bills by various Service Officers. Absence of change control mechanism resulted in discrepancies in the system generated reports and erroneous debit of ₹10.74 lakh from FRIENDS accounts. Similarly, another change made in the application without test run resulted in variation as high as ₹1.82 crore in different system generated reports. System could not achieve the goal of providing single window remittance centre to the public due to lack of timely managerial interventions and coordination with participating agencies.

(Chapter IV)

1.6.2 Compliance Audit Paragraphs

Audit adopted a new approach by identifying certain key issues based on risk factors and topical importance with a focus on deliverables in addition to the regular transaction audit. Significant deficiencies during such audit and transaction audit are detailed in the following paragraphs.

Audit of Selected Topics

1.6.2.1 Kerala Emergency Medical Services Project (108 Ambulance)

Government of Kerala, Health and Family Welfare Department (GOK), launched (December 2008) the Kerala Emergency Medical Services Project (KEMP) in Public Private Partnership (PPP) mode in Thiruvananthapuram district from May 2010 and in Alappuzha district from April 2012 through private partners selected through a bidding process. Expansion of the project to other districts had not materialised as of date (October 2014). While GOK provided 50 fully equipped ambulances and space for setting up the Emergency Response Centre (ERC), the private partner was to operate the ambulances equipped with trained paramedical staff. The public were to be provided 24x7 access to the ambulance services free of cost, by using a common toll free telephone number '108'. As per the project, an ERC was set up (May 2010) at Thiruvananthapuram to receive the distress calls from the public and to send the ambulances to the pickup spot. The services of the ambulances were to be provided round the clock through an integrated solution including Voice Logger System, Geographic Information System maps, Global Positioning System (GPS), Automatic Vehicle Tracking and mobile communication system, etc. The designed system was to ensure that on receipt of a distress call, the control room could mobilise the nearest available ambulance to pick up the distressed persons and transport them to the nearest hospitals.

The project was launched with the commendable objective of providing emergency ambulance services to the needy, free of cost. Agencies, entrusted with delivering 24x7 services failed to attend to 28102 calls due to non-availability of vehicles. In

54.48 *per cent* of cases test checked, response time of ambulances was beyond the stipulated 10 minutes.

The project was implemented only in Thiruvananthapuram and Alappuzha districts. Laxity of the department resulted in the project not being extended to other districts, despite availability of funds. Kerala Medical Services Corporation Limited allowed much higher rate for additional kilometres run beyond 2000 kilometres. Instances of flouting tender procedures in the procurement of delivery vans and fabrication of the same into ambulances were noticed. The delivery vehicles were converted as ambulances without reckoning the safety aspects of ambulances *vis-a-vis* delivery vans. The State level committee to monitor implementation of the project in the State did not meet even once.

(Paragraph 5.1)

1.6.2.2 Role of Kerala State Nirmithi Kendra in Civil Construction Works

The Kerala State Nirmithi Kendra (KESNIK) was set up in 1989 under the Travancore Cochin Literary, Scientific and Charitable Societies Act 1955 as an Apex body to co-ordinate, monitor and regulate the activities of the various Nirmithi Kendras[6] in the State. The main objective of KESNIK was to act as a seminal agency, to generate innovative ideas in the construction sector, undertake research and development activities in the housing sector, to propagate Cost Effective Environment Friendly and Energy Efficient (CEEF) technologies, etc.

KESNIK had not prepared separate Schedule of Rates for construction works using CEEF technology. The works undertaken by KESNIK involving CEEF technology was negligible. It did not exercise control over the activities of the DNKs. It did not focus on developing new cost effective, environment friendly and disaster resistant building materials due to lack of research activities. The scheme to provide building materials at discounted rates to the BPL families failed to attract sufficient number of beneficiaries. LaBISHaS, the Research and Development wing of the KESNIK did not undertake Research and Development activities due to failure to have the minimum number of faculty with prescribed qualifications.

(Paragraph 5.2)

1.6.2.3 Health Insurance schemes implemented through Labour and Skills Department

The Rashtriya Swasthya Bima Yojana (RSBY) and Comprehensive Health Insurance Scheme (CHIS) are two insurance schemes implemented in the State through the Labour and Skills Department. The RSBY was launched in 2008 by Ministry of Labour and Employment, Government of India (GOI) to provide health insurance coverage for Below Poverty Line (BPL) families[7] and to protect them

[6] Nirmithi Kendras were intended to provide an institutional framework to meet the challenges in the housing sector. India's first 'Nirmithi Kendra' was set up in Kollam district of Kerala in 1985 to provide cost effective and environment friendly (CEEF) building technology and affordable solutions to housing

[7] BPL list was prepared on the basis of score based ranking of rural households for which 13 socio economic parameters representing various deprivations faced by the poor were used

from financial liabilities that involve hospitalization. The Government of Kerala (GOK) formulated CHIS (2008) to provide similar health insurance coverage to an additional 10 lakh families identified by the State as BPL (Poor)[8] and Above Poverty Line (APL) families.

Despite rise in number of registered beneficiaries year after year, all eligible government/ESI hospitals were not empanelled. There was shortfall in enrolment of identified beneficiaries under RSBY/CHIS. Enrolment of Scheduled Tribe beneficiaries in the State was only 42 *per cent* while enrolment of ST beneficiaries in Wayanad district was only 29 *per cent* during 2013-14. Government's intention to utilise the flow back of insurance premium to improve the health care system did not materialise fully as about 24 *per cent* of the funds remained unutilised with the hospitals. Test checked empanelled hospitals also failed to recover ₹12.65 crore from insurance companies due to partial settlement/loss of data on claims. The patients were also deprived of the benefit of Transport Allowance.

(Paragraph 5.3)

Audit of transactions

1.6.2.4 Failure of Oversight/Administrative Controls

The Government has an obligation to improve the quality of life of the people for which it works towards fulfilment of certain goals in the area of health, education, development and upgradation of infrastructure and public service, etc. However, Audit noticed instances where funds released by the Government for creating public assets for the benefit of the community remained unutilised/blocked and/or proved unfruitful/unproductive due to indecisiveness, lack of administrative oversight and concerted action at various levels. Two cases of misappropriation amounting to ₹16.66 lakh occurred due to absence of proper supervisory controls were noticed. The details are given below.

- Non-adherence to codal provisions by the Chief Medical Officer and lack of supervision by the District Medical Officer (ISM) resulted in misappropriation of ₹9.30 lakh from District Ayurveda Hospital, Palakkad.

(Paragraph 5.4)

- Failure to adhere to the codal provisions led to misappropriation of Rashtriya Swasthya Bima Yojana funds of ₹7.36 lakh from Medical College Hospital, Thiruvananthapuram.

(Paragraph 5.5)

[8] BPL (Poor) – List prepared by the State Government which excludes those in the list prepared by the Planning Commission

- Inordinate delay in construction of open enclosures for crocodiles in Thiruvananthapuram zoo resulted in unfruitful expenditure of ₹59.50 lakh. Irregular receipt of ₹62.90 lakh from GOI for the same purpose and its diversion was also noticed.

(Paragraph 5.6)

- Failure of three departments to comply with the provisions of High Tension Tariff Revision Order of Kerala State Electricity Board led to avoidable payment of penalty charges amounting to ₹2.85 crore.

(Paragraph 5.7)

- Despite availability of ₹2.80 crore in March 2011, a scheme to engage unemployed Scheduled Castes in poultry production failed to take off due to failure in identifying eligible beneficiaries.

(Paragraph 5.8)

- Improper planning resulted in unfruitful expenditure of ₹4.67 crore in implementation of a water supply scheme.

(Paragraph 5.9)

1.7 Lack of responsiveness of Government to Audit

1.7.1 Outstanding Inspection Reports

The Handbook of Instructions for Speedy Settlement of Audit Objections/ Inspection Reports/timely disposal of draft audit paragraphs and matters pertaining to the Public Accounts Committee, issued by the State Government in 2010 provides for prompt response by the Executive to the Inspection Reports (IRs) issued by the Accountant General (AG) for rectification in compliance with the prescribed rules and procedures and accountability for the deficiencies, lapses, etc., noticed during the inspection. The Head of Offices and next higher authorities are required to comply with the observations contained in the IRs, rectify the defects and omissions and promptly report their compliance to the Principal Accountant General within four weeks of receipt of Inspection Report. Half-yearly reports of pending IRs are being sent to the Secretary of the Department to facilitate monitoring of the audit observations.

As of 30 June 2014, 386 Inspection Reports (2250 paragraphs) were outstanding against Police, Scheduled Tribe Development, Higher Education and Local Self Government Departments. A review of the Inspection Reports pending due to non-receipt of replies in respect of these four departments revealed that the initial replies in respect of 46 Inspection Reports containing 350 paragraphs issued up to 2013-14 were pending from the Police and Scheduled Tribe Development Department.

Year-wise details of Inspection Reports and paragraphs outstanding are given in **Appendix 1.1**.

1.7.2 Response of departments to the draft paragraphs

Draft Paragraphs and Reviews were forwarded demi-officially to the Principal Secretaries/Secretaries of the departments concerned between July and November 2014 with a request to send their responses within six weeks. The replies from Government for two out of the three reviews and seven out of nine draft paragraphs featured in this Report were received. These replies have been suitably incorporated in the Report. In addition, in the remaining review, the views of the Government as expressed in the exit conferences, were duly considered and included.

1.7.3 Follow-up on Audit Reports

According to the Handbook of Instructions for Speedy Settlement of Audit Objections/Inspection Reports/timely disposal of draft audit paragraphs and matters pertaining to the Public Accounts Committee, issued by the State Government in 2010, the administrative departments should submit statements of Action Taken Notes on audit paragraphs included in the Audit Reports directly to the Legislature Secretariat, with copies to the AG within two months of their being laid on the table of the Legislature. The administrative departments did not comply with the instructions and seven departments, as detailed in **Appendix 1.2**, had not submitted statements of Action Taken for 14 paragraphs for the period 2011-12 to 2012-13, even as of September 2014.

1.7.4 Paragraphs to be discussed by the Public Accounts Committee

The details of paragraphs pending discussion by the Public Accounts Committee as of 30 September 2014 are given in **Appendix 1.3.**

PERFORMANCE AUDIT

CHAPTER II

GENERAL EDUCATION DEPARTMENT

Performance Audit of Sarva Shiksha Abhiyan, Kerala (SSAK)

Highlights

Sarva Shiksha Abhiyan (SSA), a flagship programme of Government of India (GOI) is implemented in the State with the objective of universal access and retention, bridging of gender and social category gaps in education and enhancement of learning levels of children in the 6 to 14 age group. The programme is implemented in the State by Primary Education Development Society of Kerala (PEDSK). The Performance Audit revealed deficiencies in providing services to Children With Special Needs (CWSN), identifying gaps and areas where new schools needed to be opened, deployment of Resource Teachers, etc.

SSAK did not possess reliable data on Out of School Children (OOSC). Out of 128 OOSC surveyed by Audit, 100 belonged to ST and SC communities.

(Paragraph 2.7.1)

SSAK reckoned the number of children as CWSN without proper assessment. SSAK did not ensure delivery of adequate support services required by CWSN.

(Paragraph 2.7.2.2)

Deployment of Resource Teachers (RTs) was not related to the number of CWSN and the nature of their disability. There was a disproportionately large number of RTs trained in Mental Retardation (MR) with no RTs trained in Learning Disability and Autism. Seventy five *per cent* of RTs deployed by SSAK in test checked Block Resource Centres (BRCs) were trained in MR.

(Paragraph 2.7.2.5)

RTs did not utilise even one third of school working days to visit schools and provide resource support to CWSN.

(Paragraph 2.7.2.6)

Fourteen Multi Grade Learning Centres having 174 children (2013-14) were functioning in Thiruvananthapuram District even though there were schools within reasonable distance.

(Paragraph 2.10.1)

Evaluation of learning levels of children conducted by SCERT at the instance of audit revealed poor learning levels of children.

(Paragraph 2.11.2)

Deployment of Block Resource Persons without adhering to norms and lack of adequate on-site support by Cluster Resource Centre Coordinators led to inadequate academic support to teachers.

(Paragraph 2.11.3)

2.1 Introduction

Sarva Shiksha Abhiyan is a flagship programme of the Government of India (GOI) launched in the year 2000-01. In Kerala, the implementation of the programme was started in 2002-03**.** This comprehensive programme is being implemented with the objectives of universal access and retention, bridging of gender and social category gaps in education and enhancement of learning levels of children in the 6 to 14 age group. SSA also focussed on providing Inclusive Education to all CWSN in schools. SSA ensures that every child with special needs, irrespective of the kind, category and degree of disability, is provided quality Inclusive Education. The programme also aimed at identification of Out of School Children (OOSC) and developing context specific strategy to provide special training for them. The programme seeks to open new schools and construction of additional classrooms, toilets and drinking water facilities to strengthen existing school infrastructure. It envisages enhancing the capacity of teachers by providing periodic teacher training and through academic resource support. It also provides text books and support for learning achievement. After the enactment of the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act, 2009), the SSA framework for implementation was revised to align various provisions under SSA with the legally mandated norms, standards and free entitlements mandated by the Act.

The State followed a four year primary education cycle from class I-IV and a three year upper primary cycle from class V-VII. While Standards I to IV were categorized as Lower Primary Section, Standards V to VII were categorized as Upper Primary Section and Class VIII was attached to High School Section. The 2011 census ranked Kerala first in the country in total literacy rate (93.91 *per cent*) and female literacy (91.98 *per cent*). The gap in literacy rate between male and female which stood at 6.34 *per cent* as per the 2001 census, when the SSA was launched was reduced to 4.04 *per cent* during the 2011 census.

2.2 Organisational Setup

The programme is implemented in Kerala by a State Implementation Society *viz.*, PEDSK. At state level, the State Project Director was responsible for implementation of the programme. The district level functions were implemented by District Project Officers. Teachers were provided academic resource support by 168 Block Resource Centres[9] (BRCs) and 1385 Cluster Resource Centres[10]

[9] Block Resource Centres – Unit at block level (In the state the unit is at sub educational district level) to provide training and on-site support to schools and teachers. In urban areas, BRCs are called as Urban Resource Centres.

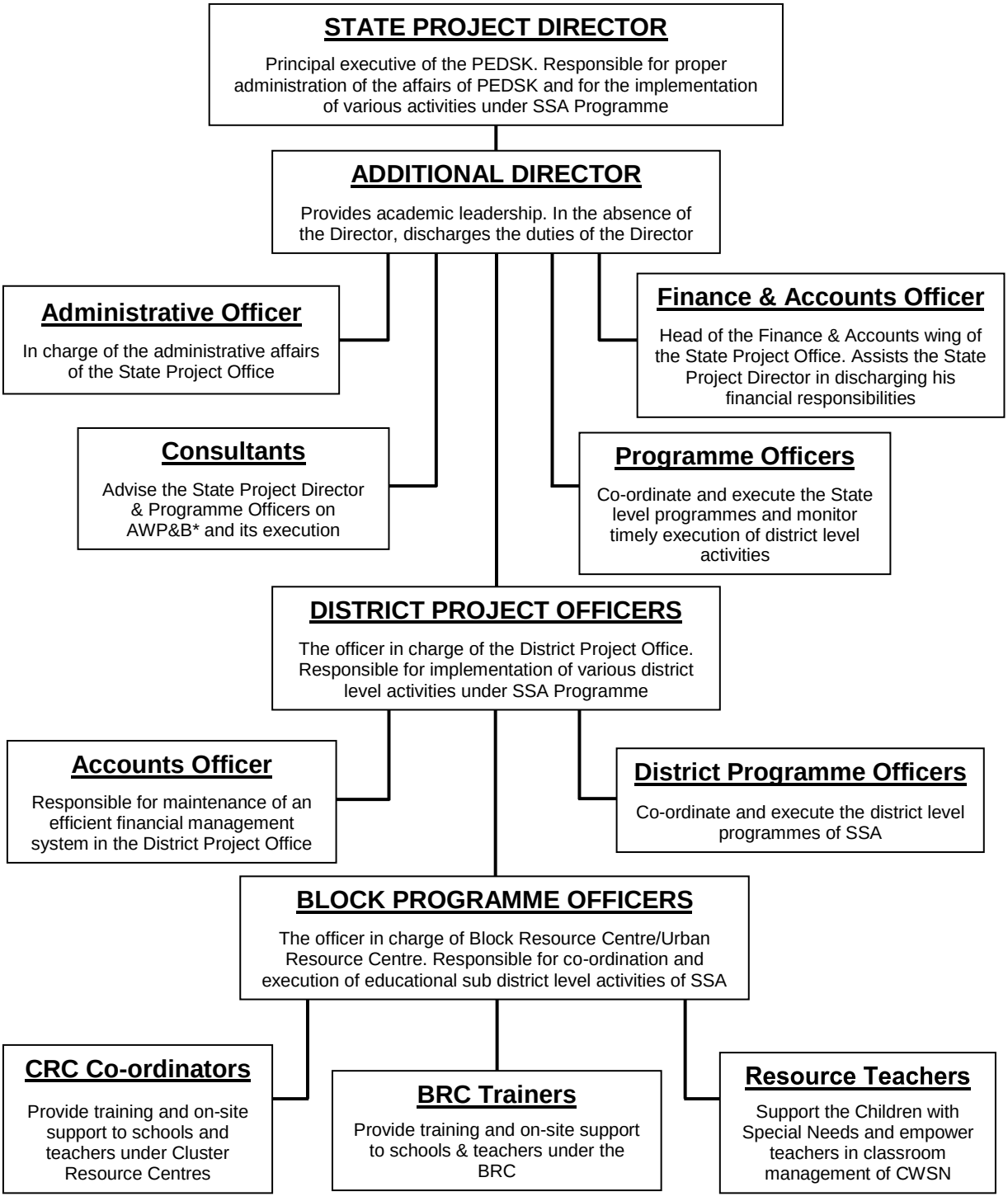
[10] Cluster Resource Centres – Unit at cluster level to provide training and on-site support to schools and teachers.

(CRCs). The organisational set up of PEDSK is given in the organogram given in **Chart 2.1**:

Chart 2.1

Sarva Shiksha Abhiyan - Kerala

ORGANOGRAM



* Annual Work Plan & Budget

2.3 Audit Objectives

With a literacy rate of 93.91 *per cent*, Kerala ranks first in the country in literacy rate and hence the Performance Audit of SSA focussed only on the effectiveness of SSAK's interventions in specific areas of:

- bridging of gender and social category gaps in providing elementary education and providing Inclusive Education to Children with Special Needs (CWSN);
- getting Out of School Children in the age group of 6 to 14 to attend schools;
- improving the quality of education.

2.4 Audit Criteria

Audit findings were benchmarked against the criteria derived from the following documents:

- SSA Framework for implementation strategies based on Right of Children to Free and Compulsory Education Act, 2009 (Framework).
- Manual for Planning and Implementation of Inclusive Education in SSA for education of Children With Special Needs (CWSN).
- The Right of Children to Free and Compulsory Education Act, 2009 (RTE Act, 2009).
- The Kerala Right of Children to Free and Compulsory Education Rules, 2011 (Kerala RTE Rules, 2011).
- SSA Manual on Financial Management and Procurement.
- PEDSK Rules and Regulations.
- Annual Work Plan and Budget approved by Project Approval Board, Ministry of Human Resource Development (MHRD), GOI.
- Persons With Disabilities (Equal Opportunities, Protection of Rights & Full Participation) Act, 1995 (PwD Act, 1995).

2.5 Scope and Methodology of Audit

The Performance Audit on 'Sarva Shiksha Abhiyan', Kerala (SSAK) covering the period 2009-14 was conducted from December 2013 to September 2014.The Performance audit on SSAK evaluated the planning and implementation of various interventions[11] in the State to achieve the overall objectives of the programme. Five[12] out of 14 districts in the State were selected for audit using Stratified Simple Random Sampling method. The district of Wayanad was additionally included in a

[11] Inclusive Education, Academic Support through BRCs/CRCs, supply of textbooks/uniforms, infrastructure development, etc.

[12] Ernakulam, Kasaragod, Pathanamthitta, Thiruvananthapuram and Thrissur

survey on "Out Of School Children (OOSC)" conducted by Audit as it has been recognised as a backward region and residents in the district face special challenges as compared to the rest of the State. The State Project Directorate of SSA, District Project Offices, 21 Block Resource Centres (BRCs) and 84 schools (42 Government and 42 Government aided) were selected for test check. Audit methodology included interviews with parents/guardians of OOSC and sample beneficiary survey of CWSN in the selected BRCs (**Appendix 2.1**). Prior to the commencement of audit, an Entry Conference detailing the scope, audit objectives, etc., was held on 30 April 2014 with the Secretary, General Education Department. The Exit Conference was held on 8 December 2014 in which audit findings were discussed.

2.6 Finances of the Programme

The expenditure on the programme was to be shared between Government of India (GOI) and the Government of Kerala (GOK) in the ratio of 60:40 during 2009-10 which was later revised to 65:35 during 2010-14. The GOI share was released directly to PEDSK in the State in two instalments. GOI would release an ad-hoc grant in April every year up to a maximum of 50 *per cent* of actual funds utilized by PEDSK in the previous year, pending approval of the Annual Work Plan & Budget. The ad-hoc grant was to be adjusted while releasing the subsequent instalment due to the State, as per approval of the Annual Work Plan and Budget for the year. The State share was released to PEDSK by the Local Self Government Institutions (LSGIs) and GOK.

Table 2.1: Year-wise details of Receipt and Utilisation of Funds

(₹ in crore)

Year	Approved Outlay	Unspent Balance of Previous Year	GOI Release	GOK Release	13th FC Grant	Other Receipts	Total Fund Available	Expenditure	Unspent Balance at the end of the year	Expenditure against approved outlay *(per cent)*	Unspent Balance *(Per cent)*
2009-10	212.65	34.47	119.90	72.29	0	1.67	228.33	193.00	35.33	90.76	15.47
2010-11	432.19	35.33	196.61	108.55	25	2.75	368.24	251.26	116.98	58.14	31.77
2011-12	476.37	116.98	170.22	115.06	27	9.88	439.14	249.96	189.18	52.47	43.08
2012-13	523.02	189.18	134.49	127.88	28	7.92	487.47	399.22	88.25	76.33	18.10
2013-14	402.94	88.25	208.01	120.68	29	6.44	452.38	410.87	41.51	101.97	9.18
Total	**2047.17**		**829.23**	**544.46**	**109**	**28.66**	**1975.56**	**1504.31**		**73.48**	

(Source: Year-wise Annual Reports of SSAK 2009-10 to 2013-14)

The above table shows that the expenditure against approved outlay during 2009-14 was 73.48 *per cent* and the expenditure against total receipts was 76.15 *per cent*.

The expenditure during 2010-11 was low as additional allocation obtained could not be utilised due to non-issue of order for appointment of substitute teachers by GOK and non-notification of RTE rules which was a condition for purchase and supply of school uniform. Similarly, the expenditure during the year 2011-12 was low due to delay in issue of order for appointment of substitute teachers and part time teachers by GOK.

Audit Findings

2.7 Bridging of gender and social category gaps and Inclusive Education for Children With Special Needs

Bridging of gender and social category gaps in elementary education was one of the goals of SSA. Consequently, SSA aimed at reaching out to girls and children belonging to SC, ST and minority communities. Besides, SSA was also contributing to inclusive education of Children With Special Needs.

2.7.1 Gender and Social category gaps

Though bridging the gender and social category gaps in elementary education was one of the major objectives of SSA, District Project Officers in test checked districts stated that no study or survey to assess the gender or social category gaps in education had been conducted. SSAK in its Annual Reports for the years 2009-10 to 2013-14 reported that enrolment of SC/ST children was at par with general category. It was stated that there was no gender gap or social category gaps as evidenced from enrolment, retention and dropout rates.

Audit however noticed that the reports published by the ST Development Department and the SC Development Department of the State (studies conducted during 2008-10 and 2009-10 respectively) revealed that 23.93 *per cent* of ST children either dropped out or discontinued studies. Among SCs, the report of the department stated that 9.75 *per cent* of the children dropped out at the school level.

There was also a preponderance of SC/ST among the OOSC tracked by Audit. Out of 128 OOSC identified by Audit, 100 belonged to ST and SC communities. Two children belonging to SC community were not sent to school by their parents because they were members of an organisation which taught their children as per their own syllabus. In order to retain children in schools, activities like vocational training, *sahavasa*[13] camp, training in martial and folk arts, exposure trips, training in bicycle riding, personality development camps, *padanaveedu*[14], parental awareness, etc., were conducted in the test checked districts. Despite SSAK implementing these initiatives, the high percentage of children remaining out of school among different disadvantaged and social category groups at the elementary level of education is an issue of concern.

In the Exit Conference (December 2014), the Secretary did not agree with the number of OOSC reported by SC Development and ST Development Departments and stated that the figures required examination. The observation of the Secretary is not acceptable and can only be termed as presumptive in view of the fact that SSAK had not conducted any household survey to determine the number of school

[13] *Sahavasa* camp: Camps conducted to help children to mingle with others and to face different life situations. Moral values were conveyed to them in the camp through games and activities

[14] *Padanaveedu*: Neighbourhood learning centres organized to focus on SC/ST and minority students who lack learning environment at home. Under the guidance of education volunteers these students get a space and help to improve their studies

dropouts and did not possess reliable data on enrolment, retention and dropouts of children.

2.7.2 Inclusive Education for Children With Special Needs

The term 'Children With Special Needs' (CWSN) refers to children who are challenged with various problems such as that of vision, hearing, speech, orthopaedically impaired, learning, cerebral palsy, mental retardation, autism and multiple disability. Inclusive Education (IE) is intended to enable CWSN to attend regular schools like other children. Besides, it was also important that these children receive all the support they need to learn adequately. The key thrust of SSA was on providing IE to all CWSN in general schools. The SSA Manual for CWSN, April 2003 (SSA Manual) stipulated that expenditure up to ₹1200 per year could be incurred on a child with minimum of 40 *per cent* disability in line with the Persons With Disabilities (Equal Opportunities, Protection of Rights & Full Participation) Act 1995 (PwD Act 1995). This was later revised to ₹3000 per year, per child from 2010-11 onwards. The total number of children identified as CWSN and expenditure per child during the years 2009-14 is given in **Table 2.2**.

Table 2.2: CWSN - Expenditure per child

Year	No. of CWSN	Budget allocation (₹ in Lakh)	Budgeted Rate per CWSN (in ₹)	Expenditure (₹ in Lakh)	Expenditure per CWSN (in ₹)
2009-10	125017	1125.15	900.00	1139.92	911.81
2010-11	122157	2809.61	2300.00	2297.41	1880.70
2011-12	124854	2994.93	2398.75	2056.04	1646.75
2012-13	164094	3445.97	2100.00	2653.22	1616.89
2013-14	178201	2370.07	1330.00	2156.01	1209.88

2.7.2.1 Projection of higher number of CWSN

Since the budget allocation for Inclusive Education was based on the number of CWSN, Audit noticed a tendency to inflate the number of CWSN in the Annual plans formulated by SSAK as explained below:

- As per the 2011 census, there were 5377882 children in the State in the age group 5 to 14 with 66519 disabled children (1.24 *per cent*). The number of CWSN covered by SSAK during the years 2010-14 was 1.84 to 2.68 times of 2011 census data.
- The Directorate of Public Instructions (DPI) had furnished the number of students in Government and aided schools with 40 *per cent* or more disability in the category of Visually Impaired (VI), Hearing Impaired (HI), Orthopedically Handicapped (OH) and Mentally Retarded (MR). The number of children reckoned as CWSN by SSAK in the above category was 2.3 to 3.2 times more than the CWSN reported by the DPI during the period 2009-14.

The Project Approval Board of MHRD while approving the Annual Plan of SSAK for 2014-15 also expressed concern on the data on CWSN and advised sample check. On sample checking, it was found that children with mild problems like those using spectacles had been included resulting in the number of CWSN being inflated.

The Secretary, General Education Department admitted in the Exit Conference (December 2014) that a sample check of five *per cent* of CWSN by SSAK led to reduction of CWSN this year (2014-15) and stated that instructions had since been given to follow the screening process meticulously.

As the sample check has resulted in reduction of number of CWSN from 178201 during 2013-14 to 136206 during 2014-15, it is reckoned that SSAK had irregularly obtained ₹5.08 crore on 41995 non-existent CWSN at ₹1210 (average expenditure per CWSN during 2013-14) per CWSN. As similar instances of obtaining ineligible assistance on non-existent CWSN in the preceding years cannot be ruled out, the issue needs to be investigated.

2.7.2.2 Lacunae in medical assessment of CWSN for IE

The SSA Manual advised adoption of standard tools for the purpose of initial identification of CWSN. Model check lists were to be used for initial screening of children. The Manual also stipulated that the extent of disability of a child was to be decided in an assessment camp or in a government hospital by a competent medical board. Each child identified in the initial screening was required to be assessed to determine the extent and type of disability, the development level of the child, the nature of support services required, assistive devices required and the most appropriate form of special training to be given to the child. BRCs in test checked districts failed to produce to Audit case sheets/prescriptions (medical assessment records) of all children stated to have been taken to these camps. Audit was therefore unable to obtain assurance that all identified children were indeed examined at assessment camps. Details of children reckoned as CWSN in 21 test-checked BRCs and the number of CWSN for whom medical assessment records were available are given in **Table 2.3**.

Table 2.3: Year-wise details of CWSN identified and availability of medical assessment records

Name of District	No. of test checked BRCs	Total No. of CWSN									
		2009-10		2010-11		2011-12		2012-13		2013-14	
		No. of CWSN	Assessment camp records available	No. of CWSN	Assessment camp records available	No. of CWSN	Assessment camp records available	No. of CWSN	Assessment camp records available	No. of CWSN	Assessment camp records available
Thiruvananthapuram	4	3947	1367	5461	1655	4154	1312	4775	1071	4859	1141
Pathanamthitta	3	1691	647	1595	780	1724	767	3029	496	2730	661
Ernakulam	5	3242	1609	3778	2024	3660	2325	6477	1421	6189	1546
Thrissur	6	3320	1074	3632	983	4669	1664	6248	1593	6357	2230
Kasaragod	3	1478	976	1581	1124	3197	2337	1877	1248	3515	1699
Total	**21**	**13678**	**5673**	**16047**	**6566**	**17404**	**8405**	**22406**	**5829**	**23650**	**7277**

(Source: Selected BRCs)

The wide variation between the number of CWSN identified and the number of CWSN for whom medical assessment records were available indicated that children were included in SSA programme without proper assessment as observed below:

- Seventeen of the 21 selected BRCs reported that assessment camps for Learning Disability (LD) were not conducted. Even though four[15] BRCs stated that they had conducted camps for assessment of LD, there was no case sheet to confirm that the children were indeed examined in these camps.
- The details collected from 21 test checked BRCs revealed that medical assessment records in respect of 41.91 *per cent* to 56.85 *per cent* of Visually Impaired Children, identified during the years 2009-10 to 2013-14, were not available.
- During 2013-14, there were 4213 identified MR children in 21 selected BRCs. However, medical assessment records were available only for 1214 MR children.
- The beneficiary survey of CWSN conducted by Audit confirmed that out of 792 children (**Appendix 2.1**) covered in the survey, medical assessment records of 460 children (Learning Disability 210, Low Vision 205 and Hearing Impaired 45) were not available at the BRCs. Model check lists as stipulated by SSA were also not used for initial screening of these 792 children.

SSAK replied (December 2014) that children who were supplied assistive aids and children not requiring assistive aids were not usually taken to assessment camps every year. Hence, there was variation between the number of CWSN and the number of children in respect of whom medical assessment records were available. The reply is not tenable in view of the fact that assessment camps for LD were not conducted in 17 of the 21 BRCs test checked and even MR children requiring regular medical attention were not taken to assessment camps. Thus, the failure of SSA to take children to assessment camps resulted in failure to determine the extent and type of their disability besides inability to assess the change in degree of their disability over a period of time. Children were thus denied the appropriate support services and special training required by them.

2.7.2.3 Preparation of Individualised Education Plan

Individualised Education Plan (IEP) is a statement stating the needs, special services required and the possible achievement of a child having special needs within a specified time frame. It should also state the most appropriate learning environment for the child. The SSA Manual required preparation of the IEP jointly by the special teacher as well as the general teacher and constantly reviewed by the district/block level functionaries to monitor the individual performance of each child.

[15] Chavakkad, Chittarikkal, Palode and Wadakkanchery

Data collected from 21 test-checked BRCs revealed that IEPs were prepared only in 0.76 to 2.27 *per cent* of CWSN during 2009-14. No IEP was prepared in any of the 792 cases of CWSN covered in the beneficiary survey conducted by Audit. Failure to prepare IEPs has resulted in inability to review the progress and monitor the individual performance of each CWSN.

SSAK replied (December 2014) that considering the lapses in previous years, instructions were since issued to prepare IEP for all categories of CWSN and to examine them periodically.

2.7.2.4 Assistance to Visually Impaired

The SSA Framework for Implementation stipulated that all children requiring assistive devices should be provided with aids and appliances, obtained as far as possible through convergence with the Ministry of Social Justice and Empowerment, State Welfare Departments, National Institutions, ALIMCO[16], voluntary organizations or NGOs. It was also stated that SSA funds could be used if aids and appliances could not be obtained through convergence.

Braille is the most important literacy tool for early childhood students who are blind or severely vision impaired. In the absence of Braille, children have to learn by listening to lessons and clear grades with the help of scribes who can read out to them and write their exams. The probability of children without access to proper Braille reading and writing skills dropping out of schools are greater as they are dependent on external assistance. Following were the details of blind CWSN identified by SSA in selected districts during 2009-14.

Table 2.4: Year-wise details of blind children under SSAK in selected districts

District	No. of blind children				
	2009-10	2010-11	2011-12	2012-13	2013-14
Thiruvnanthapuram	56	57	60	67	68
Pathanamthitta	0	0	0	8	4
Ernakulam	1	15	8	20	16
Thrissur	24	26	36	38	39
Kasaragod	5	10	65	32	65

(Source: District Project Offices of SSAK)

Audit noticed that the blind CWSN in the above districts were not provided with Braille Books, Braille Kits and audio equipment during 2009-14. Braille kits and Braille text books were not supplied by SSA to any of the 14 blind children covered in the survey. However, four children received Braille kits from other sources.

SSAK admitted (December 2014) that it was not providing Braille Kits and Braille Books under the impression that the blind children received these materials from Kerala Federation of Blind through DPI and that steps have been initiated to make available the materials during 2014-15.The reply indicates the failure of SSAK to effectively co-ordinate with other agencies to ensure that the blind children were provided with Braille assistive aids. Failure of SSAK to ensure that blind children

[16] Artificial Limbs Manufacturing Corporation of India

obtained learning aids and the resultant difficulty of blind children to learn despite attending regular school is cause for concern.

2.7.2.5 Engagement of Resource Teachers for CWSN

Resource Teachers (RTs) were specially qualified teachers capable of teaching children with special needs in all settings. Their main role was to provide remedial assistance to a child in those content areas in which he/she is having comprehension problems in a regular classroom. These teachers were expected to assess CWSN, teach the use of aids and appliances, prepare teaching material, design specific teaching activities, provide remedial teaching, prepare individual education plan, monitor the performance of CWSN, etc. RTs also advise the general teacher on how to cope with the needs of special children in the regular classroom. It was envisaged that these RTs would travel from school to school in a block/cluster according to need.

The SSA Manual required that as far as possible, RTs were to be appointed from each area of disability *viz.*, visual impairment, hearing impairment and mental retardation. The number of RTs needed in a block would depend on the size of the block and the number of CWSN in the block. The category wise details of the number of CWSN in test checked 21 blocks and the details of RTs engaged by SSAK and their deployment across blocks is given in **Appendix 2.2**.

Audit noticed that SSAK failed to offer CWSN resource support as envisaged in the SSA Manual. In the 21 test checked blocks, 23650 CWSN were provided resource support by 189 RTs. Audit analysed the deployment of RTs with reference to the various categories of CWSN in the 21 selected BRCs during the year 2013-14 and observed as follows:

- There were only nine RTs to attend to 9880 Visually Impaired in the test checked BRCs. In 15 of the 21 BRCs, 7041 Visually Impaired were not provided the services of trained RTs. In BRC Chavakkad, only one RT was deployed to provide resource support to 834 such children. Beneficiary survey conducted by Audit also revealed that 10 out of 14 blind children were taught by resource teachers who were not Braille trained.
- None of the 3990 children suffering from Learning Disability and 310 children suffering from Autism were provided with the services of qualified RTs.
- Children suffering from Cerebral Palsy (294) in 18 of the 21 selected BRCs were also not provided with services of qualified RTs.
- In 12 of the 21 BRCs test checked, 1699 children classified as Hearing and Speech Impaired were denied the services of qualified RTs.

Audit analysed the profile of RTs to determine reasons for the skewed deployment of RTs. It was seen that 142 of the 189 RTs (75 *per cent*) had specialised in Mental Retardation (MR) even though only 17.81 *per cent* of the CWSN were categorized as Mentally Retarded. The disproportionately large number of RTs with specialization in MR resulted in children with other disabilities being deprived of

suitable resource support. Moreover, the number of RTs appointed was not commensurate with the number of CWSN. Despite the stipulation that the number of RTs needed in a block would depend on the size of the block and the number of CWSN in the block, SSAK admitted (January 2015) that no norms on ratio of CWSN to RTs had been fixed.

SSAK stated (January 2015) that from the next year onwards, posting of RTs would be made according to qualification in each category. It was also stated that most of the RTs were trained in the area of MR and that they had provided multi category training to equip the RTs to handle all categories of CWSN. During 2013-14 multi-category training was imparted for ten days to all RTs which was admittedly not sufficient. It further stated that it had since been decided to deploy RTs who have special training to support the blind in the next academic year.

The reply is not acceptable in view of the fact that SSAK failed to adhere to the stipulations contained in the SSA Manual which required appointment of RTs from each area of disability *viz.*, visual impairment, hearing impairment, etc. Failure of SSAK to draft norms for determining the appropriate disability wise CWSN-RTs ratio resulting in its inability to provide academic support to large number of CWSN is inexcusable.

2.7.2.6 Functioning of Resource Teachers

The problem of inadequate number of RTs to attend to the requirements of CWSN was further compounded by the fact that out of 161 RTs for which the school visit details were available at BRCs, 139 RTs did not utilize even one third of the school working days for providing resource support to CWSN attending schools. While 15 RTs made school visits for only one to 20 days, 74 visited for 21 to 40 days and 50 RTs for 41 to 60 days during 2013-14.

Failure of RTs to make regular school visits deprived CWSN of the much needed support and resulted in payment of remuneration to RTs for services which they had not rendered.

2.8 Enrolment and Retention in Schools

According to the RTE Act, 2009, which became operational from 1 April 2010, every child in the 6 to 14 age group shall have a right to free and compulsory education. SSA aims at universal access and retention of children.

2.8.1 Enrolment

Net Enrolment Ratio[17] (NER) is an achievement indicator that reveals the level of enrolment of children of the age-group in schools. In its Annual Reports for the years 2009-10 to 2012-13, SSAK reckoned the NER of children in the age group 6 to14 in Kerala as 100 *per cent*. NER of 100 *per cent* was indicative of the fact that all children in the eligible age group were enrolled in schools. However, the annual

[17] The Net Enrolment Ratio is calculated by dividing the number of students enrolled who are of the official age-group for a given level of education by the population for the same age-group and multiplying the result by 100.

report of SSAK for 2013-14 reported a lower NER of 85.48 for primary section and 82.26 for upper primary section. Since SSAK did not possess verifiable data on the actual population in the age group 6 to 14 and their school participation status, audit could not get an assurance about the accuracy of NER claimed.

2.8.2 School Mapping

The presence of a school at appropriate locations is an essential prerequisite to universal elementary education. Universal access to elementary education requires a school within the reasonable reach of all children. Rule 6 of the Kerala RTE Rules, 2011 define the limits of neighbourhood schools[18] as one kilometre and three kilometres for children in class I to V and VI to VIII respectively. In order to obtain a clear picture regarding the availability of schools and to identify gaps and areas where new schools needed to be opened, SSA Framework for implementation (Framework) require States to map neighbourhoods and link them to specific schools. It was envisaged that school mapping would include (i) environment building in the village (ii) conduct a household survey (iii) preparation of a map indicating different households, the number of children in each household and their participation status in school (iv) preparation of a village/school education register (v) presentation of the map and analysis to the people and (vi) preparation of a proposal for improved education facilities in the village which would form the basis of the School Development Plan mandated under the RTE Act, 2009. The following were noticed in this regard:

- During 2009-14, SSAK attempted school mapping twice; once in June 2010 by a Non-Governmental Organisation (NGO) - Maithri, which failed to provide a clear picture on the need for establishing more schools. Again school mapping was conducted during 2013-14 by SSAK themselves reckoning distance to neighbourhood school from a ward[19] as the criterion for identifying un-served areas. However, the annual plan for 2014-15 prepared on this basis and submitted to MHRD was found defective as the number of wards with no school which was stated to be zero in 2011-12 and 2013-14 annual plan proposals, rose to 1107 and 1948 respectively in the annual plan proposals for 2012-13 and 2014-15. The MHRD, in the State Plan Appraisal Report also observed that the change in status of 'Access to school' as reported by SSAK was sudden and inexplicable. Thus the failure to conduct an effective school mapping exercise resulted in failure to possess accurate data on un-served habitations in the State.
- Audit observed that in areas where schools were not viable, SSA norms provided for alternative provisions like residential school and transportation facilities to enable children to obtain full time schooling. As per the Annual Plan 2014-15, SSAK proposed to provide transportation facility for easier access to schools to 3641 children who were living in un-served habitations.

[18] Neighbourhood Schools – Is a school located within the defined limits or area of neighbourhood, which has been notified by the State Government under the State RTE Rules.

[19] Ward – Ward is the name called for the territorial area of a Local Self Government Institution for the purpose of election of a member.

The proposal was not approved by MHRD citing the reason that the State had not defined the area/limits for children eligible to avail this provision. This has resulted in children being deprived of transportation facility, making it difficult for them to reach school.

- During the course of Audit, the audit team surveyed 128 OOSC. The survey revealed that 18 children did not attend the school as school was far away from places of their residence. Out of nine children who never enrolled in school, five did not enroll as the distance to the nearest school ranged between six and 28 kilometres.

The RTE Act, 2009 fixed a target of three years, up to 31 March 2013, for the establishment of neighbourhood schools. Even 20 months (November 2014) after the target time frame set by the Act, SSAK failed to conduct a comprehensive exercise to identify gaps and areas where new schools needed to be opened.

2.9 Out of School children

A child is categorized as 'Out Of School' if the child is either not enrolled or has discontinued studies from the school. SSAK reported in its Annual Report for 2013-14 that Net Enrolment Ratio (NER) was 85.48 for primary section and 82.26 for upper primary section. Age-wise population data obtained from the Census department, Ministry of Home Affairs, GOI revealed that the population of children as per the 2011 census, in the five to nine age group (primary section) was 2555112 and that of children in the 10 to 14 age group (upper primary section) was 2822770. Thus, NER of 85.48 for primary section and 82.26 for upper primary section would show that at least 371002 children in the primary section and 500760 children in the upper primary section did not either enrol or had dropped out from schools. However, SSAK identified only 2188 OOSC in the age group of 6 to 14 in the State during 2013-14.The fact that there is no correlation between the number of OOSC and NER, both arrived at by SSAK, indicates that the vital education data possessed by SSAK was unreliable and could not be used for planning purposes.

During the course of audit, we surveyed 128[20] OOSC in the age group of 6 to 14 and conducted interviews with the children or their parents/guardians in the five selected districts and Wayanad. While 119 children were drop outs from schools, nine had not enrolled in school. Of the 55 OOSC located in Wayanad district, one child dropped out of school due to Sickle cell anaemia, a health problem typical to the district of Wayanad. The details of OOSC are given in **Table 2.5**.

[20] Thiruvananthapuram-18; Pathanamthitta -3; Ernakulam- 10; Thrissur-15; Kasaragod-27 and Wayanad-55

Table 2.5: Reason-wise details of Out of School Children

Reason for being OOSC	Number of OOSC				
	ST	SC	Minorities (except Christians)	Others	Total
School far away	12	5	0	1	18
Poverty	2	2	0	3	7
Illness	7	1	1	5	14
Parents not interested	3	7	0	0	10
Child not interested	40	17	3	7	67
No transportation facility	1	0	0	0	1
Poor teaching /Absence of teachers	0	0	0	0	0
Lack of toilets / furniture in school	0	0	0	0	0
Other reasons	3	0	4	4	11
Total	**68**	**32**	**8**	**20**	**128**

(Source: OOSC Interview records)

SSAK stated that the problem of OOSC was a serious issue and they were trying out new strategies like home visits, corner meetings, involvement of NGOs and local bodies, providing incentives, etc., to bring the children to school.

2.10 Multi Grade Learning Centres (MGLCs)

MGLCs are generally single teacher schools, functioning in remote and coastal areas, teaching children of Standards I to IV. SSA provided for opening of MGLCs as alternate schooling facilities for providing education to children in un-served habitations. They were envisaged as transitory measures to provide schooling till such time as regular, full time schooling facilities could be provided in the area concerned.

2.10.1 Mainstreaming of children in MGLCs

The RTE Act, 2009 stipulated providing of full time schooling facilities to all children. MGLCs therefore, had to be upgraded to regular schools and children studying there mainstreamed into full time schools in a time bound manner. The SSA Framework also provided for closure of such MGLCs which were not required to be converted into a regular school on account of an existing neighbourhood school. The Annual work plan & budget of SSAK for the year 2014-15 revealed that 321 MGLCs with 5797[21] students were functioning in the State during 2013-14. One hundred and thirty four of these MGLCs with 2637 students were functioning in the test checked districts as detailed in **Table 2.6**.

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[21] Scheduled Caste 498; Scheduled Tribe 2612, Minorities 2092 and Others 595

Table 2.6: District-wise details of MGLCs

District	No. of MGLCs	No. of students
Thiruvananthapuram	23	271
Pathanamthitta	7	37
Ernakulam	7	157
Thrissur	2	10
Kasaragod	56	1433
Wayanad	39	729
Total	**134**	**2637**

(Source: Annual work plan & budget for the year 2014-15 of SSAK)

It was observed as follows:

- In May 2013, the Director of Public Instruction (DPI) submitted a proposal to GOK for upgrading 111 MGLCs (including 35 MGLCs of the 134 MGLCs) as Lower Primary Schools stating that land was available. Upgradation of these 111 MGLCs was pending as of November 2014. Failure to upgrade MGLCs resulted in children studying in these MGLCs without full-fledged schooling facility.
- In Thiruvananthapuram district, 14 MGLCs with 174 children (2013-14) out of the 23 MGLCs mentioned in Table 2.6 above, were functioning even though there were schools within reasonable distance. GOK had stipulated (March 2014) that for upgradation of MGLCs, the minimum requisite distance from the nearest Government/Aided school should be three Kilometres. Audit noticed that the distance between the 14 MGLCs and nearest schools was 0.5 to 1, 1.5 to 2 and 3 Kilometres for six, seven and one MGLCs respectively.

The Secretary, General Education Department stated in the Exit Conference that they were aware that educational volunteers working in some of the MGLCs were persuading parents to send their wards to MGLCs to avoid loss of their employment.

Failure of GOK to close down such MGLCs just to provide protection of employment of educational volunteers as stated by the Secretary is not acceptable since inaction of GOK has resulted in depriving children regular, full time schooling facilities as mandated in the RTE Act, 2009.

2.11 Quality of education imparted under SSAK

2.11.1 Supply of Text books

SSA envisaged providing text books, free of cost to all children of standards I to VIII studying in Government/aided schools. However, since GOK was supplying free books to students of standard I under State Plan, SSAK confined distribution of free text books to the children of standards II to VIII. SSAK fixed the upper

ceiling for supply of text books at ₹150 per child at the Primary level and ₹250 per child at the Upper Primary level. During 2009-14, SSAK had spent ₹248 crore under the intervention, 'Free text book supply'. Audit noticed that 69 *per cent* of the schools test checked did not maintain records of text books supplied to schools free of cost and distributed to students. Out of 83 test checked schools, 27 (33 *per cent*) reported that there was delay in supply of text books during 2013-14. One school[22] did not respond.

The Kerala Books and Publications Society which prints and supplies the books stated that defective indenting by schools was the reason for delay in receipt of books in schools. The society suggested that the indents should be verified by Assistant Educational Officers/District Educational Officers for ensuring their correctness and print order should be proper for timely distribution of books.

SSAK replied (November 2014) that Text Book Department was responsible for distribution of books. SSAK further stated that it was only a funding agency and hence had no role in the printing and supply of text books. The reply is not acceptable since SSAK failed to ensure effective utilisation of its funds.

2.11.2 Assessment of learning levels of children

As per Rule 7 (1) of the Kerala RTE Rules 2011, it is the responsibility of the Government to monitor regularly the levels of learning of children in all Government, aided and un-aided elementary schools in the State and to conduct evaluation of learning outcomes in five *per cent* of the schools through an external agency and bring out annual reports on the quality of elementary education in the State. No such evaluation was conducted by the Director of Public Instruction during the period from 2011-12 to 2013-14.

At the instance of Audit, the State Council of Educational Research and Training (SCERT), Kerala conducted a study to assess the level of achievement of learners at the primary level. Sample population of children studying in Standards IV and VII were administered standardized tests in Malayalam, English, Mathematics and Science (Environmental Science for Std IV and Basic Science for Std VII) to assess learning levels since standards IV and VII were exit levels for lower and upper primary education system in Kerala. Even though the study envisaged testing children in five districts (Thiruvananthapuram, Pathanamthitta, Ernakulam, Thrissur and Kasaragod), SCERT had completed data analysis of only Thrissur district during finalization of this performance report.

The results of the study of achievement levels of children in Standards IV and VII in Thrissur district revealed as follows:

- Assessment of proficiency in writing and vocabulary skills in Malayalam of Standard IV students revealed that 33 *per cent* and 21 *per cent* of learners did not obtain even a single score in writing skills and vocabulary respectively. While performance of nearly 10 *per cent* of students in

[22] Government Upper Primary School, Vellikulangara

Mathematics was very low, only a negligible *per cent* attained expected level of performance in Environmental Science.

- Children in Standard VII performed poorly in Mathematics and Basic science.
- A significant number of children in Standard VII could not write in Malayalam.

The results of the study indicate the necessity for GOK/SSAK to address the problem of children not having the basic level of knowledge required for them to be able to cope with the learning requirements in the next higher grade.

2.11.3 Academic support through Block Resource Persons

Teachers in Government/aided schools were provided academic resource support through a network of 168 Block Resource Centres (BRCs) and 1385 Cluster Resource Centres (CRCs). Cluster Resource Centres are sub-sections of BRCs. Block Resource Persons (BRPs) were required to provide on-site support to teachers of schools under the BRC. BRPs include Block Resource Centre (BRC) Trainers and Cluster Resource Centre (CRC) co-ordinators. CRC Co-ordinators were responsible to provide on-site support to teachers in their cluster[23]. Both BRC trainers and CRC Co-ordinators reported to the Block Programme Officer (BPO). There were 215 BRC trainers/CRC coordinators in the 21 test checked BRCs.

2.11.3.1 Deployment of Block Resource Persons

The SSA Manual on Financial Management and Procurement required blocks having more than 100 schools and smaller blocks to be provided with 20 and 10 BRPs respectively in BRCs and CRCs put together. These BRPs were to be deployed in BRCs and CRCs as resource persons. Of the 21 selected BRCs, all except two (Kothamangalam and Kasaragod) had less than 100 schools, ranging from 35 to 93. Details collected from the selected BRCs for the year 2013-14 revealed that more than 10 BRPs were posted in nine of the nineteen BRCs having less than 100 schools. In Palode and Parassala BRCs having 77 and 71 schools, the number of BRPs posted was eight and 19. In the two BRCs having more than 100 schools, only eight BRPs per BRC were posted. Since the BRPs were required to provide academic support to teachers in the schools under the respective BRC, posting of BRPs without considering the number of schools indicated that the deployment of BRPs was not judicious.

The Secretary stated in the Exit Conference (December 2014) that the deployment of BRPs was a problem because they were reluctant to work in hilly and remote places. The reply of the Secretary is an admission of the helplessness of Government to deploy the BRPs across the State, based on the needs.

[23] A group of schools in a Panchayat/Municipality area

2.11.3.2 Effectiveness of BRCs

The RTE Act mandates provision of training facilities as well as good quality education. BRCs and CRCs were the most critical units for providing training and on-site support to schools and teachers. Details collected from the 21 selected BRCs revealed the following.

- BRCs were required to function as repository of academic resources including Information and Communication Technology, science and math kits, teaching/learning material in different curricular areas, including pre-school material and material for CWSN. All the selected BRCs reported that academic resources available were not adequate.
- BRCs were to organize teacher trainings based on requirements of teachers observed during school visits. Sixteen of the test-checked BRCs did not maintain data on the training needs of teachers. In the absence of data on training needs, Audit could not assess whether the requirements of the school teachers were satisfactorily met.
- BRCs had to ensure regular school visits and on-site support by BRC trainers to address educational and other issues related to school development. Audit analysed the activities of 44 BRC Trainers in 19 selected BRCs who were in service during the whole of the academic year 2013-14[24].It was noticed that the number of days spent by them for imparting training and school visits to provide on-site support to teachers were limited. Seventy three *per cent* of them spent less than 41 days for providing academic support to teachers during the academic year 2013-14. Thus, BRC trainers who were expected to provide adequate academic support to teachers failed in their mission.

About the deficiency of on-site support, Secretary stated that the deficiency was due to engaging BRC trainers for other non-academic works and that the situation has improved this year. The engagement of BRPs in non-academic works and resultant inability to provide academic support to teachers is an unacceptable practice.

2.11.3.3 Functioning of CRC Coordinators

In the Annual Plan of SSAK for the year 2012-13, MHRD sanctioned the appointment of 1190 CRC Coordinators. The State Government introduced a comprehensive education package in 2011 for the appointment and deployment of school teachers in General Education sector. As part of the implementation of the package, Government approved (March 2012) the lists of teachers (1419) who had worked in aided schools and were retrenched from service due to reduction in number of divisions on account of decrease in number of students and also 127 specialist teachers (teachers trained in Music, Physical Education, Sewing, etc.). As the Annual Plan of SSAK for the year 2012-13 provided for appointment of 1190 CRC Coordinators, Government deputed the retrenched teachers including 127

[24] Mullassery and Anthikkad BRCs had no BRC Trainer with 10 months service during the academic year 2013-14.

specialist teachers for 10 days training. On completion of the training, these teachers were appointed as CRC Coordinators under SSAK. The State Project Director of SSAK further issued instructions (April 2013) to District Project Officers to retain the teachers appointed as CRC Coordinators, until further orders.

Audit observed that since CRC Co-ordinators were required to provide on-site academic support to teachers, appointment of 127 specialist teachers as CRC Coordinators did not serve the intended purpose of providing on-site academic support to teachers. Audit also noticed that in the selected BRCs, 34 out of 124 CRC Co-ordinators had service of only up to three years in school and that 30 of them were retrenched prior to 2007-08, the academic year in which the curriculum was revised. Thus, their ability to provide on-site academic support to teachers was questionable. In the test checked BRCs, Audit noticed that out of 124 CRC Coordinators, 56 Coordinators (45 *per cent*) did not visit even a single school for providing on-site support during 2013-14. While on-site Support was provided by 33 Co-ordinators (27 *per cent*) for 1 to 10 days, 22 Co-ordinators (18 *per cent*) provided on-site support for 11 to 20 days**.**

Appointment of retrenched teachers with inadequate experience and posting of specialist teachers as CRC Coordinators indicate that the posts of CRC Co-ordinators sanctioned by MHRD were used to accommodate retrenched teachers. Besides, persons appointed as CRC Co-ordinators did not provide stipulated on-site support resulting in failure to achieve the intended objective of enhancing the capacity of teachers.

The Secretary stated in the Exit Conference (December 2014) that all CRC Co-ordinators were trained teachers and the effectiveness of specialist teachers working as CRC Co-ordinators would be examined. The fact however remains that retrenched specialist teachers appointed as CRC Co-ordinators would not be able to provide the required on-site academic support to teachers.

2.11.4 Free supply of uniform

School uniforms constitute an expense which poor families were often unable to afford, and thus became a barrier for many children to pursue and complete elementary education. SSA norms provided for supply of two sets of uniforms for all girls and boys belonging to SC/ST/BPL families in Government schools within a ceiling of ₹400 per child per annum. During 2012-13 and 2013-14, SSAK made the following provisions for free supply of uniform to all girls, SC/ST/BPL boys studying in Government schools.

Table 2.7: Details of Outlay and Expenditure on free supply of uniforms

(₹ in crore)

Year	No. of children	Amount provided in SSA Plan	Amount spent
2012-13	937901	37.52	29.36
2013-14	843472	33.74	29.20

(Source: SSAK)

Details of free supply of uniform in 42 test checked Government schools revealed that 1037 students in ten schools were not provided free uniforms during 2012-13. During 2013-14 also, 3450 children in 34 schools were not provided school uniforms. In eight schools, uniforms were issued in February and March 2014 i.e., just before the close of the academic year. The main reason for delayed supply or non-supply of uniform during the year 2013-14 was a delay of six months (December 2013) in issuing purchase guidelines.

The Secretary stated in the Exit Conference (December 2014) that delay in empanelling of vendors for supply of uniform during 2013-14 resulted in delay in issue of purchase guidelines. He further stated that from this year onwards each school would be permitted to identify suppliers for the procurement of uniform to avoid delay.

2.12 Conclusion

The objective of providing Inclusive Education to CWSN in general schools was not met. The CWSN were not medically assessed. Blind CWSN were not provided with Braille books, braille kits and audio equipment during 2009-14. Resource Teachers to train CWSN were not qualified. A disproportionately large number of RTs were trained in MR resulting in children with other disabilities being deprived of suitable resource support. The functioning of the RTs was also not satisfactory. They did not prepare IEPs to monitor the individual performance of each CWSN. Majority of the RTs did not utilize even one third of the school working days to provide resource support to CWSN. Statistical information on the number of Out of School children available with SSAK was not reliable and therefore the high enrolment figures reported, cannot be accepted as correct. School mapping exercise conducted by SSAK in 2010 and 2013 for obtaining information on availability of schools for identifying areas where new schools needed to be opened was ineffective. Several MGLCs were functioning in Thiruvananthapuram district even though there were schools within reasonable distance. Necessary instructions were not issued to shut down these MGLCs and to mainstream the children in regular schools, to protect employment of educational volunteers. Tests on learning levels of children conducted at the instance of Audit revealed very poor learning levels indicating necessity for preparing them adequately for the next grade. Deployment of Block Resource Persons and CRC Co-ordinators to provide on-site academic support to teachers in Government/aided schools was not as per norms. Post of CRC Co-ordinators were used to accommodate specialist teachers and retrenched teachers with inadequate experience and resulted in failure to achieve the objective of enhancing the capabilities of teachers.

2.13 Recommendations

SSAK may:

- Take steps to conduct medical assessment of CWSN for monitoring progress and insist on preparation of IEPs;

- Prepare norms for engagement of RTs based on number of CWSN and nature of their disability and deployment across the State as per the need;
- Conduct household survey to identify all OOSC in the State and ensure their attendance in schools;
- Focus on enhancing the quality of teaching to ensure higher learning levels among children; and
- Engage only qualified BRC Trainers and CRC Co-ordinators and deploy them as per norms.

CHAPTER III

HEALTH AND FAMILY WELFARE DEPARTMENT

Performance Audit of Indian System of Medicine - Ayurveda

Highlights

Indian Systems of Medicine consists of Ayurveda, Siddha, Unani and Naturopathy. Ayurveda encompasses preventive, promotive and curative components of healthcare with equal importance. It is widely practiced in the State through an extensive network of hospitals and dispensaries both in government as well as in private sector. A Performance Audit on the Ayurveda component of Indian Systems of Medicine including Ayurveda medical education was conducted covering the period 2009 to 2014. The audit revealed underutilisation of funds, non-formation of full-fledged AYUSH department, shortage of staff, shortage in inspection of drug manufacturing units, deficiencies in diet supplied to patients, deficiencies in infrastructure, non-availability of Drug Testing Laboratory for Ayurveda, etc.

Failure to furnish Utilisation Certificates to Government of India (GOI) for funds already received resulted in the State losing GOI assistance of ₹12.75 crore receivable during 2012-14.

(Paragraph 3.6.1)

New departments for Preventive Ayurveda, Yoga, Naturopathy and Vishachikitsa in Government Ayurveda College, Thiruvananthapuram were not setup resulting in refund of GOI assistance of ₹1.50 crore in May 2013.

(Paragraph 3.6.2)

Inadequacies in infrastructure facilities, non-availability of equipment and inadequate number of Medical Officers and Paramedical staff were noticed in the hospitals and dispensaries test checked.

(Paragraphs 3.7.4, 3.8.2 and 3.8.4)

In the Government Ayurveda Hospital, Punnapra due to absence of male Nurses/Therapists and Cook, the hospital neither provided therapy treatment to male patients nor provided diet to its patients. The hospital had the lowest bed occupancy of 33 *per cent* out of 14 test checked hospitals.

(Paragraph 3.8.1)

In seven test checked hospitals, there was no heating facility in the therapy/treatment rooms forcing patients to bring fuel and stove for heating *Thailam* for oil massage.

(Paragraph 3.8.5)

Oushadhi, the Government of Kerala Company, did not test the Ayurveda drugs for presence of heavy metals, aflatoxin, toxicity and pesticide residue before supplying to institutions.

(Paragraph 3.9.1)

Indents for purchase of drugs were prepared by the Department of ISM without assessing the consolidated annual requirement resulting in overstocking of drugs.

(Paragraph 3.9.3)

The Patent Cell did not acquire patent rights for any of the 2505 *oushadha* formulations it deciphered from manuscripts.

(Paragraph 3.12.2)

3.1 Introduction

Ayurveda means "the science of life" (in Sanskrit '*ayur*' means "life" and '*veda*' means "science"). Ayurveda is an ancient and comprehensive system of health care. The system aims to prevent illness¸ heal the sick and preserve life. Ayurveda has its origins in India and extended its wings to various parts of the world. Ayurveda was divided into eight clinical specialities such as *Kayachikitsa* (internal medicine), *Salya Tantra* (surgery), *Salakya* (disease of supra-clavicular origin[25]), *Kaumarabhrtya* (paediatrics, obstetrics and gynaecology), *Bhutavidya* (psychiatry), *Agada Tantra* (toxicology), *Rasayana Tantra* (rejuvenation and geriatrics) and *Vajikarana* (aphrodisiology and eugenics[26]). 'Ayurveda Massage' is part of the treatment protocol.

Kerala's health care system consists of Allopathy, Indian Systems of Medicine (ISM) and Homoeopathy. ISM consists of Ayurveda, Siddha, Unani and Naturopathy of which Ayurveda is widely practiced and has an extensive network of hospitals and dispensaries, both in government and private sector. Ayurveda is an integral part of Kerala's health landscape and encompasses preventive, promotive and curative components of healthcare with equal importance.

There are 118 Ayurveda hospitals including six speciality hospitals, 782 Ayurveda dispensaries, four visha dispensaries and 20 Ayurveda sub-centres delivering healthcare services in the State. Besides, the State Health and Family Welfare Society of Kerala (SHFWS) also operates 208 Ayurveda dispensaries under National Rural Health Mission (NRHM) in various parts of the State. During the year 2013-14, the hospitals and dispensaries had patient footfall of 2.04 crore which included 93,387 in-patients. Medicines required for free distribution to patients in government hospitals/dispensaries were procured from Pharmaceutical Corporation (IM) Kerala Ltd. (Oushadhi), a Government of Kerala undertaking.

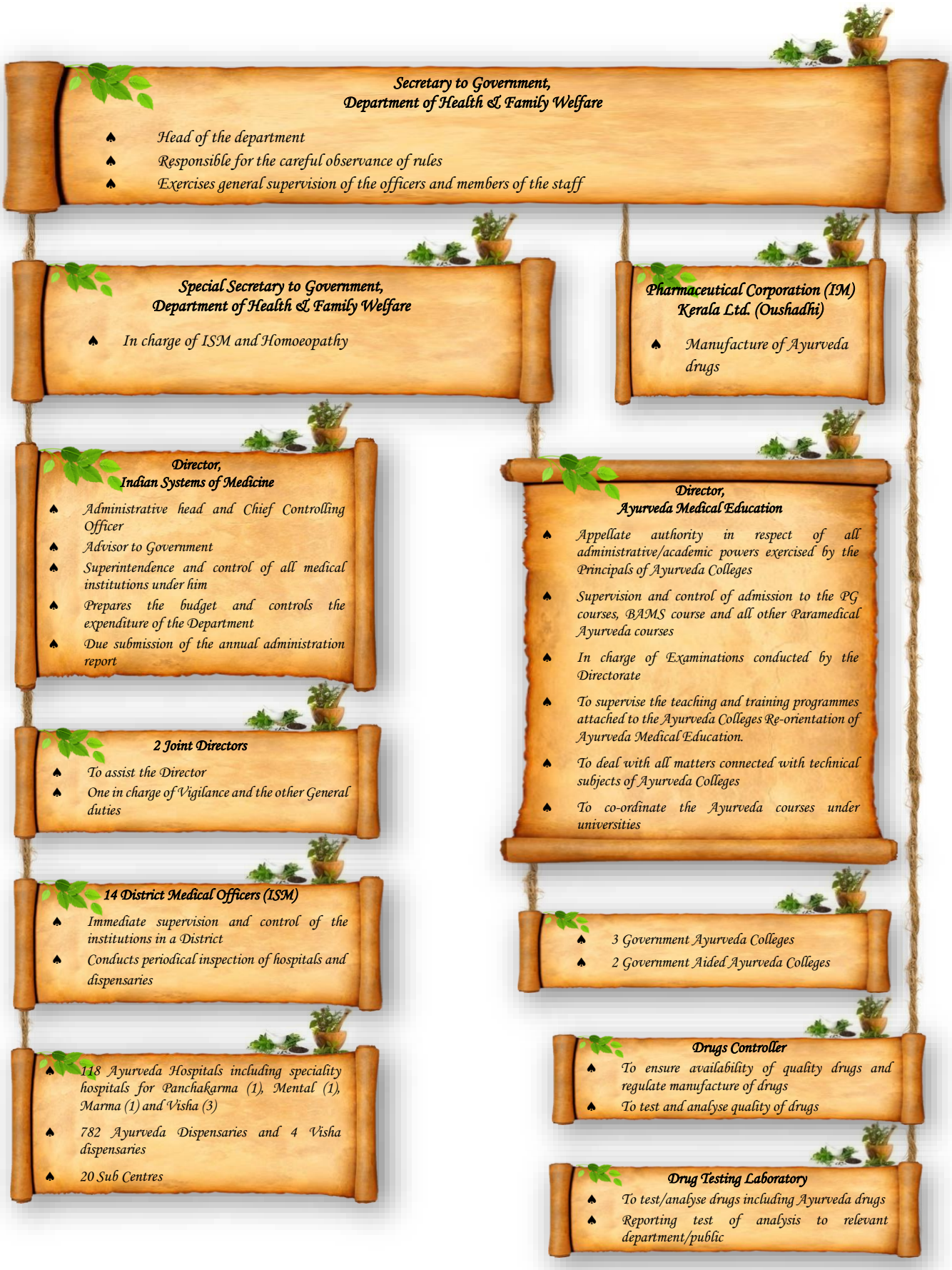
[25] This branch deals with dentistry, disease of ear, nose, throat, head and oral cavity

[26] This branch deals with the means of enhancing sexual vitality and efficiency for producing healthy and ideal progeny

3.2 Organizational Setup

The Secretary to Government, Health & Family Welfare Department (H&FWD) is the overall in-charge of the health services in the State. A Special Secretary in the H&FWD has been exclusively looking after the charge of ISM and Homoeopathy with effect from August 2014. The Director of Indian Systems of Medicine (DISM) and the Director of Ayurveda Medical Education (DAME) exercise overall control over the Ayurveda institutions in the government sector. At the district level, the District Medical Officers (ISM) exercise administrative control over the respective hospitals and dispensaries. The organisational set up of H&FWD relating to Ayurveda is given in **Chart 3.1**

Chart 3.1
Organogram of Departments of ISM and Ayurveda Medical Education



3.3 Audit Objectives

Performance audit was conducted to assess whether:

- Ayurveda hospitals and dispensaries delivered intended services to the public;
- Ayurveda Medical Colleges in the State were imparting quality medical education;
- Research and Development activities in Ayurveda including standardization of drugs, collection and digitization of ancient literature, conservation and cultivation of medicinal plants were adequate; and
- The activities undertaken by Government for promoting Ayurveda Medical Tourism were effective.

3.4 Audit Criteria

Audit findings were benchmarked against the criteria derived from the following documents:

- Acts and Regulations issued by Central Council of Indian Medicine,
- The Clinical Establishment (Registration & Regulation) Act 2010, the Drugs and Cosmetics Act 1940 and relevant Rules and Orders,
- Operational guidelines (September 2008) on National Mission on Medicinal Plants, guidelines on Central scheme for evolving pharmacopoeia standards issued by Department of AYUSH[27] for research activities, guidelines issued by National Mission for Manuscripts and Intellectual Property Rights,
- National Policy on Indian Systems of Medicine and Homoeopathy 2002, Kerala Indigenous Medicine Departmental Manual,
- Atomic Energy (Radiation Protection) Rules, 2004 on licensing of X-ray units,
- The Kerala Ayurveda Health Centres (Issue of licence and Control) Act 2007 and Rules made thereunder (2008).

3.5 Scope and methodology of Audit

A mention was made in the Audit Report of C&AG of India, Government of Kerala (Civil) for the year ended 31 March 2004 on the Indian Systems of Medicine and Homoeopathy (paragraph 3.3). PAC discussed the report and made recommendations in its 88th Report of 2008-11 and remedial action is being taken by the Department. The current Performance Audit on 'Indian System of Medicine - Ayurveda' conducted from March to August 2014 covered the Ayurveda health institutions under DISM, Ayurveda colleges and hospitals attached to Ayurveda

[27] Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy

colleges under the DAME, Oushadhi, the State Medicinal Plants Board, State Horticulture Mission (SHM), the Directorate of Tourism, etc.,

The Performance Audit was carried out by test check of records in the Department, Offices of the DISM and DAME, five[28] District Medical Officers (ISM), Oushadhi, 58 Ayurveda health care institutions, three Ayurveda Colleges and attached hospitals selected from five out of 14 districts in the State, selected on the basis of two-tier stratification sampling. Details are given in **Appendix 3.1**. Audit methodology included gathering evidence by conducting joint physical verification along with the department personnel, obtaining photographic evidence wherever possible and conducting patient's survey in selected institutions[29] to assess patient's satisfaction level.

The entry and exit conferences were held with the Secretary to Government, H&FWD in June 2014 and December 2014 respectively, where the audit objectives, audit criteria, audit methodology and audit findings were discussed. Views of the State Government and replies of the departmental officers were taken into consideration while finalising the report.

Audit findings

The audit findings are given in the succeeding paragraphs with separate sections for Ayurveda healthcare facilities/services, Medical Education, Research and Development activities and Medical Tourism.

3.6 Under-utilisation of funds

Details of budget provision and expenditure of the Health and Family Welfare Department *vis-a-vis* ISM and Ayurveda Medical Education and Government of India (GOI) assistance received through NRHM for AYUSH institutions during 2009-14 are as shown in **Table 3.1**.

[28] Alappuzha, Malappuram, Palakkad, Thiruvananthapuram and Thrissur

[29] Survey conducted in 57 selected institutions except Government Ayurveda Research Institute for Mental Diseases (GARIM), Kottakkal.

Table 3.1: Budget provision and expenditure

(₹ in crore)

Year	Budget Provision		Expenditure		Grant in aid from AYUSH Department, GOI[#]
	H&FWD	ISM*and Ayurveda Medical Education	H&FWD	ISM and Ayurveda Medical Education	
2009-10	1517.45	188.56	1518.82	182.65	13.93
2010-11	1849.23	223.84	1847.63	217.38	32.19
2011-12	2647.23	314.07	2591.44	287.26	14.58
2012-13	2897.66	308.74	2919.77	307.37	0.00
2013-14	3330.89	386.56	3283.68	375.10	0.00
TOTAL	**12242.46**	**1421.77**	**12161.34**	**1369.76**	**60.70**

* ISM includes Ayurveda, Siddha, Unani, Yoga and Naturopathy

[#] Funds released through NRHM

(Source: Information compiled by O/o the PAG (A&E), Kerala and NRHM)

The expenditure of ₹1369.76 crore on ISM constituted 11 *per cent* of the total expenditure on Health and Family Welfare during 2009-14 in the State. Besides, Local Self Government Institutions (LSGIs) also released funds to the Ayurveda hospitals and dispensaries for procurement of drugs. Audit findings are discussed below:

3.6.1 Lapse of GOI assistance

Department of AYUSH, GOI released ₹54.71 crore out of ₹60.70 crore during 2009-12 as grant-in–aid to SHFWS under NRHM for upgradation of AYUSH hospitals and dispensaries including procurement of medicines, engagement of personnel and supply of drugs in the State. The State has not received any assistance from GOI since 2012-13 as Government of Kerala (GOK)/NRHM is yet to furnish UCs for ₹9.38 crore of the ₹54.71 crore received by it due to which the grant of ₹12.75 crore receivable from GOI for the years 2012-14 under this component has lapsed. GOK/NRHM's failure to obtain GOI's share resulted in the non-payment of salary to 68 Ayurveda Medical Officers and 203 Therapists appointed under the scheme, since September 2012. Though the Medical Officers were subsequently redeployed in NRHM dispensaries, contracts of 203 Therapists were not renewed after March 2014.

Audit also noticed that due to failure of SHFWS to submit UCs, ₹0.93 crore sanctioned to VPSV Ayurveda College, Kottakkal under 'Development of AYUSH institutions/colleges' during 2012-13 was also withheld by GOI.

3.6.2 Lack of Development of AYUSH institutions

Under the scheme for development of AYUSH institutions/colleges, GOI sanctioned (June 2010) ₹2.19 crore to Government Ayurveda College (GAC), Thiruvananthapuram for construction of buildings for establishing additional departments for Preventive Ayurveda, Yoga, Naturopathy and Vishachikitsa and

released ₹1.5 crore. Audit noticed that GAC Thiruvananthapuram could not start the work due to which the amount was finally refunded to GOI (May 2013).

Government replied (December 2014) that M/s. Habitat Technology Group who were entrusted with the work were not willing to take up the work at the prevailing PWD Schedule of Rates and that the PWD was also not interested in undertaking the work. The reply is an admission of inefficiency of the department to make arrangements for the construction works when funds were available for the purpose and is a matter of concern.

3.7 Ayurveda Healthcare facilities

3.7.1 Lack of formation of full-fledged AYUSH department

The National Policy on ISM&H 2002 and GOI's directions (March 2011) envisaged formation of a separate AYUSH Department with a full-fledged Secretary in States. The State Government appointed a Special Secretary only in August 2014 exclusively to look after the ISM & Homoeopathy under H&FWD. However, a separate AYUSH department is yet to be established. Government stated (December 2014) that the formation of a separate AYUSH department was under active consideration of the Government.

3.7.2 Opening of new dispensaries

One of the stated objectives of the Department of ISM was to open an Ayurveda dispensary in every Grama Panchayath (GP). However, no time frame was fixed for attainment of the objective. Audit noticed (March 2014) that 65 out of 425 GPs in the test checked districts did not have either a Government Ayurveda Hospital or Dispensary and hence the objective of having Ayurveda dispensary in every GP was not achieved. However, in 63 of the 65 GPs, temporary dispensaries were being operated by NRHM.

Government admitted (December 2014) that 178 panchayaths in the State were without Government ISM hospitals and dispensaries and that ₹70 lakh was earmarked during 2014-15 for opening such institutions in uncovered GPs.

3.7.3 Co-location of AYUSH facilities

GOI introduced a Centrally Sponsored Scheme, during the 10th plan (2002-03 to 2006-07), to integrate AYUSH health care services with mainstream healthcare services. It was envisaged that there should be a cafeteria approach of making AYUSH and allopathic systems available under one roof at Primary Health Centres (PHC)/Community Health Centres (CHC)/District Hospitals (DH). Apart from improving people's access to healthcare services, it was also intended to provide a choice of treatment to the patients. Under the scheme, GOI made provision for release of grants to State Governments for co-location of AYUSH facilities at PHCs/CHCs/DHs. Audit observed that GOK failed to submit proposals to GOI for co-location of AYUSH facilities with PHCs/CHCs/DHs and thus failed to obtain GOI assistance for the same. In none of the test checked districts, Ayurveda and

Allopathy co-existed at PHCs/CHCs/DHs resulting in denial of facility of quality and cost effective health care under a single roof.

Government replied (December 2014) that presently seven Government Ayurveda Dispensaries (GADs) are functioning in the premises of PHCs/CHCs but the policy of co-location of AYUSH facilities at PHC/CHC/DH level could not materialise in the State due to reluctance of professional and service organizations in Allopathic (modern) medicine sector.

The fact, however, remains that Government's failure to address the misplaced concerns of the practitioners of modern medicine has resulted in denying people easy access to healthcare services of their choice, besides loss of GOI grant.

3.7.4 Up-gradation and Standardisation of Ayurveda Hospitals/ Dispensaries

GOK aimed to provide better Ayurveda treatment facilities by upgradation of hospitals in a phased manner under the scheme Upgradation and Standardisation of hospitals after fixing standards for infrastructure facilities and services. GOK had also planned to standardise the facilities in Ayurveda dispensaries in partnership with LSGIs on a project mode under the scheme Strengthening and Improvement of dispensaries. Under the schemes, it was *inter alia* planned to (i) increase the bed strength from the existing 50 to 100 in 10 District Ayurveda Hospitals (DAH), (ii) to provide X-ray facilities, Panchakarma and Ksharasutra units in all DAHs (iii) to provide laboratory facilities in all hospitals and (iv) to provide equipments/furniture/utensils/LPG connection and drugs, etc. in dispensaries. During 2009-14, GOK provided ₹15.75 crore for upgradation of hospitals and ₹4.50 crore for strengthening of dispensaries of which DISM spent ₹14.53 crore and ₹3.77 crore respectively.

Audit noticed that the bed strength was increased to 100 only in DAH Kozhikode against 10 DAHs proposed as GOK is yet to accord sanction for other DAHs. While X-ray units were provided in all DAHs except DAH Ernakulam, Panchakarma and Ksharasutra units were not yet provided in three DAHs and 10 DAHs respectively. Laboratories were provided only in 46 hospitals out of the 118 hospitals in the State. Details of poor infrastructure facilities in the test checked hospitals and dispensaries such as hospitals and dispensaries functioning in old/dilapidated/unfit/leaking buildings, space constraints for functioning of wards/therapy room, non-provision of basic amenities like toilet, drinking water, electricity, water connection, etc., non-functioning X-ray units, laboratory units, etc. noticed in Audit are given in **Appendix 3.2**. GOK/Clinical Establishment (Registration & Regulation) Act 2010 specified 39 common items/equipment required in Ayurveda dispensaries. Audit found non-availability of common items/equipment when compared to the above list as shown in **Appendix 3.3**.

DISM had not fixed any standards for infrastructure facilities and services in hospitals/dispensaries. It had also not prepared any evaluation report on implementation of the schemes for each year specifying the physical targets and

achievements there-against resulting in non-assurance of effective implementation of the schemes.

Government stated (December 2014) that at present there is no provision for standardisation of ISM institutions and a Core Committee would soon be formed for the purpose. It was also stated that presently permission to start X-ray and Laboratory units were granted only to hospitals where adequate space was available.

3.8 Healthcare services

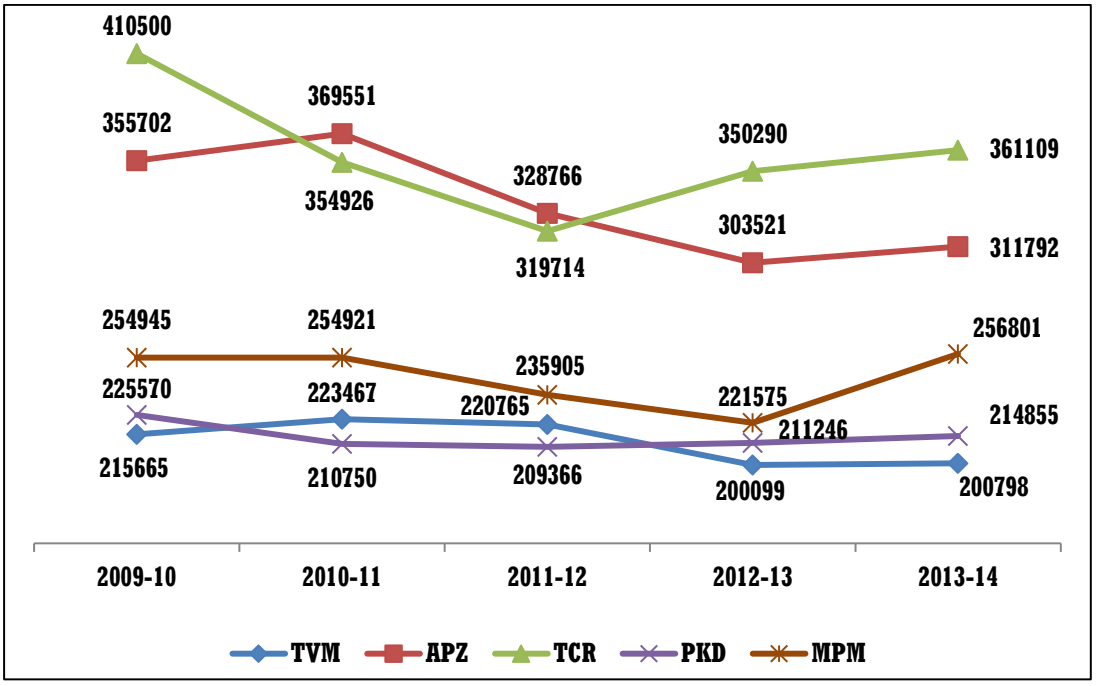
3.8.1 Out-patient and In-patient services

Out-patient services were offered by both hospitals and dispensaries while In-patient services were offered only by hospitals. During the year 2013-14, Government Ayurveda Hospitals (GAH) and dispensaries in the State had patient footfall of 2.04 crore which included 93,387 in-patients. Footfall of out-patients and bed occupancy in respect of test-checked hospitals/dispensaries are discussed below.

Audit analysed the footfall of out-patients in test-checked hospitals and dispensaries under DISM in five selected districts. It was seen that the number of out-patients declined in all test checked districts when compared to the footfalls in the year 2009-10 except in Malappuram where an upward trend was noticed in year 2013-14 as shown in **Chart 3.2**.

Chart 3.2

Trend analysis of Out-patients in selected districts



Audit also noticed that the average bed occupancy against the available bed strength during the period 2009-14 in 10 out of 14 test checked hospitals ranged between 33 and 90 *per cent* as detailed in **Appendix 3.4**. The lowest bed occupancy of 33 *per cent* was noticed at GAH, Punnapra. It was noticed that due to the absence of male Nurses/Therapists and Cook, the hospital neither provided therapy treatment to male patients nor provided diet to its patients, which could explain the very low bed occupancy in the hospital. Non-availability of Specialist doctors, Therapists and also the isolated location of the hospitals were cited as reasons for the lower bed occupancy by the Medical Officers of two hospitals (GAH Thiruvali and DAH Valavannur). Government confirmed (December 2014) these reasons.

Government however, did not mention about the measures taken to improve the bed occupancy.

3.8.2 Shortage of Medical Officers and paramedical staff

Audit noticed inadequate number of Medical Officers and Paramedical staff in position against sanctioned strength in hospitals/dispensaries under the control of DISM (status as on 1 October 2014) as given in **Table 3.2.**

Table 3.2: Shortage of staff

Name of post	Sanctioned	Actual	Shortage
Medical Officers/Specialists	1136	1062	74
Nurses	401	389	12
Therapists	30	19	11
Pharmacists	931	853	78
Lab Technicians	15	5	10
Radiographers	2	0	2
Nursing Assistants/Attenders/ Pharmacy Attenders	1223	1051	172

Staff pattern for Ayurveda hospitals under the DISM with reference to the bed strength was fixed as early as in May 1978. Audit noticed shortage/excess in the number of posts sanctioned when compared with the number of posts required against the average bed occupancy in hospitals test checked. It was seen that in Government Ayurveda Marma Hospital (GAMH), Kanjiramkulam and Government Visha Vaidya Hospital (GVVH), Wadakkanchery, the average bed occupancy during 2009-14 was more than the sanctioned bed strength. However, there was shortage in the sanctioned posts of Medical Officers/ Pharmacists/Nurses. In GAMH, Kanjiramkulam, against sanctioned bed strength of 10, average bed occupancy was 45 indicating that a large number of patients were availing the facilities in the hospital. However, against the required staff strength of three Medical Officers, two Pharmacists and five Nurses, there was a shortage of one Medical Officer, one Pharmacist and three Nurses. Similarly, in the GVVH, Wadakkanchery, there was shortage of two Nurses, while at GAH Nedumangad, the shortage of nurses was three. In view of the fact that certain hospitals with lesser average bed occupancy had the full complement of sanctioned staff strength and in some cases even excess staff (**Appendix 3.5**), failure of GOK to rationalize the staff

strength has resulted in hospitals with higher number of patients having to function with lesser number of staff.

Shortage of manpower significantly affected service delivery in hospitals/dispensaries as elucidated below:

- In Government Ayurveda Research Institute for Mental Diseases (GARIM), Kottakkal in Malappuram district, the post of Hospital Superintendent remained vacant since April 2010 and against three sanctioned posts of Specialists, two posts were vacant from November 2012.
- It was noticed that though sanctioned strength of Nurses were filled up in 13 out of 14 hospitals test checked, no male Nurses were appointed in eight of these hospitals.
- The post of Therapist was essential for carrying out the *Kriyakarmam* i.e., panchakarma procedures. Therapists/Masseurs were assigned the responsibility of application of various massages to the patients on the direction of the physician concerned. Ten out of 14 hospitals test checked did not have sanctioned posts of Therapists. While Hospital Management Committees (HMCs) in five[30] hospitals had engaged Therapists for attending to patients, in five[31] other hospitals test checked, these services were delivered by Nurses/Nursing Assistants/Attenders who were not trained in Therapy.
- In GAH Punnapra, only female Nurses were available and consequently, the male patients were denied therapy.
- In the absence of sanctioned posts of Pharmacists in two[32] of 36 Government dispensaries test checked, Attenders were dispensing the medicines.
- Despite nine of the 14 hospitals test checked having laboratories, the post of Laboratory Technician was not sanctioned for four[33] hospitals. Laboratory Technicians were appointed by Government in two[34] hospitals and laboratories in six[35] hospitals were functioning with technicians appointed by HMC on daily wage basis. In GAH Nedumangad, laboratory was yet to be made operational.

Government stated (December 2014) that DISM had informed that the vacant posts of Medical Officers and paramedical staff were not filled up since advice for appointment from Kerala Public Service Commission (KPSC) was yet to be received and that the posts of Attenders, which were to be filled up by promotion were not done due to shortage of staff in the lower categories. The reply is not acceptable in view of the fact that Government/HMC could have engaged these

[30] DAH Alappuzha, DAH Palakkad, GAH Guruvayur, GAH Irinjalakuda and GAH Palode
[31] DAH Valavannur, GAH Punnapra, GAH Thiruvali, GVVH Wadakkanchery and RVDAH Thrissur
[32] GAD Choondal and GAD Kandasankadavu
[33] GAH Guruvayur, GAH Irinjalakuda, GAMH Kanjiramkulam and GAH Nedumangad
[34] GARIM Kottakkal and RVDAH Thrissur
[35] DAH Alappuzha, DAH Palakkad, DAH Valavannur, GAH Guruvayur, GAH Irinjalakuda and GAMH Kanjiramkulam

personnel on temporary basis to address the shortfall in manpower till permanent filling up of these posts.

3.8.3 Diet

The Kerala Indigenous Medicine Departmental Manual and subsequent orders of Government prescribed various food items and their quantity to be distributed as diet to patients. The DISM enhanced (August 2013) the cost of diet to in-patients from the existing ₹25 to ₹30 per day per patient, with direction to limit the cost to the prescribed rate of ₹30. Audit noticed (July 2014) that the food items and the quantity supplied in test checked hospitals *viz.*, bread & milk in the morning, rice & green gram at noon and evening were not as prescribed[36] in the Manual and Government orders. Even though 13 out of 14 test checked hospitals provided *Kanji* diet to its patients, it was seen that GAMH Kanjiramkulam did not include bread and milk in its diet. Three hospitals (DAH Valavannur, GAH Guruvayur and Panchakarma Hospital, Alappuzha) failed to supply bread to its patients. Even the hospitals which distributed bread to its patients distributed only 100-200 gms against the stipulated 400 gms. Against the stipulated requirement of 500 ml milk, all the hospitals which distributed milk, supplied only 200 ml to 250 ml to its patients. Audit noticed that out of 14 Ayurveda hospitals, the GAH Punnapra did not provide diet to in-patients as there was no cook in the hospital. The diet was not able to provide nutritive food to injured sportspersons admitted in the Sports unit of GAH Nedumangad and Rama Varma District Ayurveda Hospital (RVDAH), Thrissur.

During survey, 66 *per cent* of the in-patients expressed that diet provided was sufficient, 10.38 *per cent* opined that it was not sufficient, while others either did not respond or were subjected to restricted diet as part of the treatment.

Government replied (December 2014) that the diet charges of ₹30 per day were grossly insufficient to give quality food to patients and enhancement of diet charges is under its consideration.

3.8.4 X-ray services

Atomic Energy (Radiation Protection) Rules, 2004 on licensing of X-ray units provide for issuing of licence for operating radiation installations after inspecting the working practices being followed to ensure adherence to prescribed safety standards, availability of appropriate radiation monitors and dosimetry devices for purposes of radiation surveillance, etc. The Director of Radiation Safety (DRS) is the authorised agency in Kerala to issue licences on behalf of Atomic Energy Regulatory Board.

Five of the 14 hospitals test-checked were provided with X-ray units. Out of these, three hospitals (DAH Alappuzha, RVDAH Thrissur and DAH Valavannur) offered X-ray services and in two hospitals (GAMH Kanjiramkulam and DAH Palakkad), the units were not made functional. Audit noticed that X-Ray machines were

[36] Milk Diet: Milk 750ml, Bread 400gm, Butter 20gm, Biscuit 40gm, Egg 1 no.
Kanji Diet: Rice 200gm, Green gram 60gm, Milk 500ml, Bread 400gm, Butter 25gm

operated in DAH Alappuzha from May 2012 and in RVDAH Thrissur from December 2011 without obtaining Certification of Safety from the DRS. The technician handling the X-ray unit in DAH Alappuzha was not provided with TLD[37] film badges to indicate levels of exposure to radiation. In the absence of TLD badges and safety certification from the DRS, Audit could not obtain reasonable assurance that patients and technicians were not being exposed to more than permissible radiation levels.

Government replied (December 2014) that action has been initiated to obtain safety certificates from DRS.

3.8.5 Oil massage

Oil massages play a major role in the treatment protocol under Ayurveda. '*Thailam*[38]' used in therapy requires to be heated prior to application on the patients. Audit noticed that in DAH Valavannur in Malappuram district, Panchakarma Hospital, Alappuzha, GAH Nedumangad, GAH Punnapra, GAH Palode, GVVH Wadakkanchery and GAH Thiruvali there was no heating facility in the therapy/treatment room. Failure of the hospitals to make provision for heating *Thailam* resulted in patients being forced to bring stoves and fuel for warming the *Thailam*, which is a matter of concern.

The inpatient survey showed that 30.19 *per cent* of patients had to bring fuel and stove for heating *Thailam* and 64.15 *per cent* of patients had to bring the raw herbal materials required for the treatment.

CMO, DAH Valavannur stated that the facility was not provided as sanction was not received for LPG installation.

Government replied (December 2014) that majority of in-patients in hospitals have to undergo various treatment procedures and accepted that the allocation for fuel was meagre. It also stated that DISM had since issued directions to District Medical Officers in this regard.

The reply is not acceptable in view of the immense hardships being caused to patients. In the circumstances, the Government/DISM is required to provide these basic facilities.

3.8.6 Distribution of Ayurveda drugs to patients

Government Ayurveda Hospitals and Dispensaries supply free drugs to all patients obtaining treatment from these institutions. Audit noticed following deficiencies in this regard:

- The survey conducted among in-patients and out-patients indicated that 33.02 *per cent* of in-patients and 58.51 *per cent* of out-patients were getting all drugs from Pharmacy, 64.15 *per cent* of in-patients and 35.33 *per cent* of out-patients purchased some drugs from the market due to non-availability of drugs in Pharmacy. Others did not respond. Further,

[37] Thermo Luminescent Dosimeter
[38] Thailam – Medicated oil

1.89 *per cent* of in-patients were purchasing drugs from market due to difficulty in coming to the hospitals as drugs were supplied from Pharmacy on alternate days only during treatment period. Moreover, 1.09 *per cent* of out-patients were skipping the treatment as cost of drugs was not affordable.

- GOI had introduced (October 2009) shelf life for Ayurveda medicines with effect from 1 April 2010 and directed that medicines should not be in circulation after their expiry date. In the test checked hospitals and dispensaries, Audit noticed several items of time expired medicines in main stock and pharmacy and administration of such drugs to patients**.** The CMO, DAH Valavannur stated that they were not aware of the introduction of expiry dates for Ayurveda drugs as the information was not communicated to them. Audit also noticed that time expired medicines were administered to patients in GAD Mundathikode in Thrissur district, even after having been pointed out about such defects by Audit.

  Government stated that DISM have cautioned CMO, DAH Valavannur and GAD Mundathikode about their ignorance on the subject. However, Audit observed that the DISM had not issued any directions to DMOs regarding introduction of shelf life of Ayurveda drugs.

3.9 Production and distribution of Ayurveda drugs

Good Manufacturing Practices (GMP) for Ayurveda, Siddha and Unani medicines prescribed in the Drugs and Cosmetics Rules, 1945 required manufacturers to evolve methodology and procedures to ensure that:

- Raw materials used in manufacture of drugs are authentic, of prescribed quality and free from contamination;
- Adequate quality control measures were adopted in manufacture of drugs and
- Manufactured drugs released for sale are of acceptable quality.

The Rules also prescribe regular inspection of Ayurveda drug manufacturing units. Audit observations on the above are discussed below:

3.9.1 Non-adherence of stipulated standards by Oushadhi

DISM procured Ayurveda drugs from Oushadhi, a GOK undertaking for free distribution to patients in government hospitals. As part of our audit exercise for assessing the quality of drugs procured by GOK for free distribution among patients, we conducted (July 2014) physical verification of the manufacturing facility of Oushadhi, jointly with its officials which revealed that stipulated standards were not being adhered to by Oushadhi.

- We noticed during audit that *'churnam'* manufactured in the factory was piled on the floor of the factory and the possibility of the drug being contaminated with dirt and sand cannot be ruled out.

'Churnam' piled on floor of Oushadhi

- There were no sterile manufacturing areas with bacterial retaining filters, etc. in the factory essential to manufacture sterile drugs like '*Elaneerkuzhambu'*, an eye ointment. Routine microbial count of the manufacturing area during operations was also not carried out. Oushadhi admitted that there was no separate area for manufacturing sterile '*Elaneerkuzhambu*' and stated that they have now planned to shift its production to a separate area.

- Ayurvedic Pharmacopeia of India (API) emphasised that all Ayurveda drugs must comply with the limits for heavy metals prescribed in individual Monograph and wherever limits were not stipulated, compliance with the limits given in World Health Organisation publications was stipulated. It was noticed that the products manufactured by Oushadhi were not tested for presence of heavy-metals, aflatoxins, toxicity and pesticide residue. Oushadhi admitted its inability to conduct tests about heavy-metals, aflatoxins, toxicity and pesticide residue and stated that facilities were available for testing only microbial load and physico-chemical parameters.

- Audit noticed reported instances (February 2014) of patients complaining about numbness in the tongue and general fatigue on administration of *Suryaprabha*[39] tablets (Batch No P50-9) in three[40] GADs. Despite receiving several complaints from institutions, the reported batch of the drug was not withdrawn from hospitals/dispensaries. Oushadhi, however, conducted Microbial tests of the returned medicine with reference to the control sample and found no variations. It stated that mode of administration, media of intake and quantity prescribed by the doctors vary from patients to patients and therefore, it was not necessary to withdraw the whole of the batch. However, in view of Oushadhi admitting its inability to test for heavy-metals, aflatoxins, toxicity and pesticide residue, the presence of these elements in the products and resultant patient discomfort cannot be ruled

[39] A drug containing heavy metals
[40] (1) GAD Chettivilakom, Thiruvananthapuram (2) GAD Karimba, Palakkad and (3) GAD Chazur, Kannur

out. Audit, therefore, could not obtain assurance that the drugs supplied by Oushadhi conformed to stipulated safety standards.

Government replied (December 2014) that steps are being taken by Oushadhi to collect *churnam* in a trolley directly from the machine instead of transferring to the floor, the manufacturing of *Elaneerkuzhambu* will be shifted to a sterilised area where microbial count will be kept minimum and to ensure the hygiene of the production unit and that the installation of new machine procured for testing heavy metals is in progress and machines for testing aflatoxins, etc. would be procured in the next year.

3.9.2 Drug production at GAC Thiruvananthapuram

Ayurveda drugs are manufactured at the Pharmacy at GAC Thiruvananthapuram for use of patients in the three hospitals attached *viz.*, GAC Hospital, Women and Children (W&C) Hospital and Panchakarma hospital in Thiruvananthapuram. Audit noticed that the Pharmacy did not possess a licence under D&C Act, though it manufactured drugs on a large scale. A Commission appointed by the Principal to examine the deficiencies and to suggest steps to improve the functioning of the pharmacy recommended (August 2012) setting up of a Pharmacy Advisory Board for overseeing all the activities of pharmacy attached to the GAC Thiruvananthapuram. The report also suggested constituting a Pharmacy Production Committee for scientific production of Ayurveda drugs, laid down procedures for storing of raw materials/finished products, etc. Audit however, noticed that the College was yet to take remedial action on the recommendations.

Government replied (December 2014) that license was not essential since the drugs were manufactured at the Pharmacy for free distribution to the patients and was not intended for sale. The reply is not acceptable in view of the fact that the National Research Institute for Panchakarma, Cheruthuruthy, Thrissur district, a GOI institution manufacturing only three drugs for free distribution to patients in the hospital had obtained manufacturing license. Moreover, possessing a licence under the D&C Act would also have ensured adherence to provisions of the Act and resultant production and distribution of quality drugs to the patients.

3.9.3 Procurement process of drugs under DISM

The Directorate of Indian System of Medicine procures medicines once in four months subject to annual monetary ceiling[41] according to the category of institutions. Indents prepared by Medical Officers of institutions were approved by the DMOs concerned and forwarded to Oushadhi for supply of drugs directly to the institutions. The DISM procured drugs directly for implementation of various State

[41] ₹0.66 lakh for dispensaries, ₹6.05 lakh for 100 bedded hospitals, ₹3 lakh for 50 bedded hospitals, ₹1.45 lakh for 30 bedded hospitals, ₹1.32 lakh for 25 bedded hospitals, ₹1.05 lakh for 20 bedded hospitals, ₹0.84 lakh for 10 bedded hospitals, ₹0.78 lakh for six bedded hospitals, ₹0.73 lakh for four bedded hospitals

Plan Schemes[42] to provide Ayurveda oriented health care services through healthcare institutions. Besides, funds were also provided by LSGIs for procurement of medicines from Oushadhi and Ayurdhara[43] for use by hospitals/dispensaries under their control. Audit noticed shortcomings in procurement and distribution of medicines as brought out below:

- As per GOI guidelines, the procurement agencies are to decide about the required medicines out of the medicines listed in Essential Drug List (EDL) as per the prevalence and needs of patients. However, DISM had not prepared a list of medicines in conformity with EDL. Government stated (December 2014) that an expert committee for formulating EDL in the State would be constituted immediately.
- There is no system in place at the DISM to assess centrally the annual requirement of drugs of field units after reckoning the stock available and trend in consumption. In the hospitals/dispensaries visited, Audit noticed that indents for departmental/scheme supply and LSGI supply are prepared without assessing the consolidated annual requirement. Audit further noticed large quantities of medicines stocked in four[44] hospitals/ dispensaries in two districts due to procurement in excess of actual requirement. In Malappuram District, three[45] hospitals held huge stock of drugs procured during 2012-14. Audit compared (July 2014) the item-wise stock of drugs available at the DAH Valavannur with that consumed during the years 2012-14 and noticed that the hospital had sufficient stock of drugs supplied by LSGIs to cater to the entire needs of the hospital for the next two to 14 years. The CMO of the hospital attributed the bulk stock to the delayed supply of medicines for the year 2012-13. Audit also noticed during physical verification damage to 10000 numbers of '*Vilwadi Gulika*' amounting to ₹13400 (at the rate of ₹134 per 100 numbers) received during 2012-13 in GAH Manjeri.

Government replied (December 2014) that explanation from DMO concerned has been sought for the lapses and implementation of an Inventory Management System for ISM was being seriously looked into.

3.9.4 Inspection of manufacturing units

Quality of drugs procured and distributed to patients in the State can be ensured only by regular inspection of manufacturing units to check the manufacturing processes and testing of products manufactured by them for stipulated quality.

[42] (1) Control of Communicable Diseases – a scheme implemented during 2009-14 aimed at control of epidemics like Cholera, Jaundice etc. (expenditure ₹1.71crore) (2) Balamukulam – a School Health Programme implemented in selected schools in the districts of Wayanad, Kasaragod and Palakkad during the years 2012-14 (expenditure ₹1.35 crore) and (3) Six other schemes with a total expenditure of ₹1.05crore implemented in 2013-14

[43] An Ayurveda drug manufacturing unit functioning under the control of SC/ST development Co-operative Federation

[44] GAH Irinjalakuda, GADs Anakayam, Edakkara in Malappuram and Kandasankadavu in Thrissur districts

[45] DAH Malappuram, GAH Manjeri and DAH Valavannur

As per the Drugs and Cosmetic Rules, 1945, the Drug Inspectors (DI) are required to inspect all premises licensed to manufacture Ayurveda drugs, not less than twice a year to ensure that the conditions specified in the licence and the statutory provisions were being observed. The number of licensed Ayurveda manufacturers during 2009 to 2013 was 980, 937, 870, 774 and 890 respectively. It was noticed that there was shortfall ranging from 63 to 81 *per cent* in conducting inspection of the Units. GOI insists one DI for every 100 manufacturing units. Minimum number of DIs required for inspection of 890 units (in year 2013) will be eight. However, there were only three DIs and in respect of the four new posts sanctioned in September 2012, appointments were made temporarily from January 2014 and these posts remained vacant from October 2014. The shortage of DIs hampered the inspection process.

Government replied (December 2014) that the shortages in conducting inspections were due to insufficient DIs and also non-availability of vehicles and assured conduct of inspections as stipulated on filling up the four vacant posts by regular hands, for which the recruitment process is in progress.

3.9.5 Ayurveda Drug Testing Laboratory

In the state, Ayurveda drugs are tested for statutory quality control in a division functioning within the State Drug Testing Laboratory (DTL) for allopathic medicines under the administrative control of State Drugs Controller. Quality Council of India during the gap study (June 2009) of DTL recommended (April 2011) to separate the Ayurveda, Siddha and Unani (ASU) testing laboratory from the rest of DTL, which mainly caters to testing of allopathic drugs. But it was noticed that the same was not implemented (December 2014) and the State still does not have a separate State DTL for testing samples of ASU drugs (December 2014).

Audit noticed that under the GOI scheme for strengthening DTL for quality control of ASU drugs in the State, the Drug Standardisation Unit (DSU) attached to the Government Ayurveda College, Thiruvananthapuram obtained ₹1.50 crore. The DSU, despite having spent ₹1.43 crore of GOI grant continues to function as a research unit for supplementing academic activities and not as a DTL for ASU drugs in the State.

Government stated (December 2014) that strict directions were issued to the Principal, GAC Thiruvananthapuram to conduct drug testing at DSU in consultation with DDC (Ayurveda), and that directions of Government (January 2013) to shift the DSU and its employees to the control of DDC (Ayurveda) was kept in abeyance due to strong protest from students/staff.

The reply is not tenable in view of the fact that only the DDC (Ayurveda) is the licensing authority for Ayurveda manufacturing units in the State with powers to initiate action as per provisions of the D&C Act, 1940. Results of drugs tests were also to be authenticated by a notified officer (Government Analyst). No powers were vested with the DAME/Principal in this regard. Hence the direction of Government to DAME/Principal to conduct drug testing was not practical and

against legal provisions. Non-availability of an exclusive DTL for testing statutory samples of ASU drugs even after availing GOI grant of ₹1.5 crore is a matter of concern.

3.9.6 Licensing of Ayurveda Health Centres

The Kerala Ayurveda Health Centres (Issue of Licence and Control) Act, 2007 and Rules made thereunder (2008) provided for categorizing Ayurveda health centres into 'A', 'B' and 'C' on the basis of facilities available like infrastructure, trained manpower and equipment. The Act also stipulated that Ayurveda Health Centres[46] should possess a valid license issued by the DISM after an inspection and certification by a three member committee[47] with a view to ensure that the provisions of the Act are being complied with. The licenses were to be renewed after every three years. Audit noticed that the DISM had not issued a single license (December 2014) to any such Centre. The DISM also did not possess data on the number of Ayurveda Health Centres operating in the State. Failure of DISM to discharge responsibilities entrusted by the Act is significant when viewed in the light of the fact that criminal cases were registered against six illegal Ayurveda health centres in the State during 2013-14 alone.

Government replied (December 2014) that the present Kerala Ayurveda Health Centres (Issue of Licence and Control) Act would be repealed when the Kerala Clinical Establishment (Registration & Regulations) Bill 2013 would be enacted by the Legislature. However, the reply fails to explain why the DISM did not enforce provisions of an Act which was passed by the Legislature and for which rules were also framed for implementation. Besides, there were also no directions from Government restricting the DISM from enforcing the provisions of the Act.

3.10 Medical Education

The Directorate of Ayurveda Medical Education (DAME) was established (November 2000) for the effective administration of matters relating to Ayurveda medical education in the State.

3.10.1 Admission of students

The UG course in Bachelor of Ayurvedic Medicine and Surgery (BAMS) was available in all 16 Government/Aided/Self-financing colleges in the State with an intake capacity of 910 students. Post Graduate (PG) courses were available only in six Government/Aided/Self-financing colleges as of March 2014 with ability to admit only 130 students. Audit noticed that during 2012-13, the CCIM[48] refused

[46] 'Ayurveda Health Centre' means an establishment or premises by whatever name be known to provide Ayurveda treatment but does not include the establishments under the direct ownership or management of the Government and the dispensaries conducted by the Ayurveda Medical Practitioner only for the mere diagnosis and distribution of medicines or the agencies selling the medicine

[47] A three member committee consisting of the District Ayurveda Medical Officer of the district in which the establishment is situated, a senior Ayurveda Medical officer of the district as suggested by the Director and a Doctor in the department of Kayachikitsa - Panchakarma of any Government Ayurveda College as suggested by the Director of Ayurveda medical Education

[48] Central Council of Indian Medicine

permission to GAC Thiruvananthapuram to admit students to the PG course in *Kaumarabhritya* (5 seats) and also reduced the number of seats for *Agadatantra* from five to three. Thus, as against 10 admissible seats for these two PG courses, permission was granted to operate only three seats since the college did not fulfill the eligibility conditions of CCIM in terms of adequacy of qualified Teachers for conducting these PG courses.

GOK replied (December 2014) that the GAC sought time to fulfill the shortcomings noticed by CCIM during inspection but they denied and reduced the PG seats. However GOK did not clarify why GAC failed to explain inadequacy of teachers.

3.10.2 Training in Surgery and Gynaecology

As per the syllabus for BAMS course, students are required to be trained in Surgery and Gynaecology. Since adequate facilities were not available for imparting such training in Ayurveda Colleges, Government directed (1984 and later) the Directorate of Health Services to provide facilities in Government Allopathy hospitals for imparting training in Surgery and Gynaecology. Government also issued orders (1988) to continue the arrangement till the Ayurveda colleges were equipped with the required facilities. During test check, it was however, noticed that the Ayurveda colleges continued to lack facilities for providing training in Surgery and Gynaecology to their students. Failure to provide requisite facilities in Ayurveda colleges for such training even after a lapse of 30 years, is a matter of concern.

Government replied (December 2014) that DAME had reported that some Allopathy doctors were reluctant to obey Government orders and BAMS students were not well treated in Allopathic hospitals and to overcome the situations, the required facilities for training of BAMS students are to be provided in Ayurveda colleges only. Government also stated that orders were again issued (December 2014) facilitating training in selected Allopathic hospitals in the State.

Failure of Government to enforce its own orders is cause for concern.

3.10.3 Ayurveda Paramedical Certificate Course on Therapy

Qualified Ayurveda Therapists play a major role in providing Ayurveda treatment and were in demand both in Government and private sector. DAME was the sole authority in the State to regulate paramedical certificate courses in Ayurveda Therapist and Ayurveda Pharmacy. Admission to these courses in Government/Government Aided/Self-financing Ayurveda Colleges/Institutions was made on the directions issued by DAME. Audit, however, noticed that during the period 2009-14, certificate course in Ayurveda Therapist was conducted only twice in 2009-10 and 2012-13. Records produced to Audit did not indicate any initiatives taken by the department to conduct such certificate courses in Government sector despite demand. Failure of DAME to conduct sufficient number of Paramedical certificate courses on Therapy led to students depending on unrecognised private institutions for such courses.

Government stated (December 2014) that DAME had reported that it is difficult to conduct the paramedical certificate courses regularly with the existing staff strength and due to inadequacy of other faculties. However, Government did not offer comment about conduct of paramedical certificate courses by unrecognised private institutions.

3.10.4 Availability of Teachers in Ayurveda Colleges

As per Indian Medicine Central Council (Minimum Standards of Education in Indian Medicine) (Amendment) Regulations 1989 and notifications issued subsequently, for appointment of teachers in Ayurveda Colleges with effect from 01 July 1989, a PG qualification in the subject/speciality or in allied subject concerned as notified by CCIM is required. However, Audit noticed that seven[49] out of 167 faculties in the three[50] test checked Ayurveda colleges who were appointed after 01 July 1989 did not possess the required PG qualification. One of the seven faculty (Assistant Professor in Ayurveda college, Ollur) has since been declared (November 2014) by CCIM as ineligible for appointment as faculty.

Government (December 2014) stated that teachers were appointed in accordance with the Special Rules for Kerala State Ayurveda Medical Education (Teaching Services)[51] and hence there will be differences as per the Rules of CCIM. During Exit Conference (December 2014) the Secretary assured that the Special Rules would be amended suitably in line with CCIM norms.

3.11 Infrastructure of Ayurveda Colleges and attached hospitals

3.11.1 Execution of Building works

GOK sanctioned ₹3.85 crore during the period 2011-14 for three construction works[52] in GAC Thiruvananthapuram. Audit noticed that these works were not started/completed as of December 2014 due to non-identification of site, non-preparation of plan and design, etc. Similarly, in VPSV Ayurveda College, Kottakkal also, three works namely Panchakarma block first floor (₹0.68crore), OP block first floor (₹0.53 crore) and Electrical Sub-station (₹0.22 crore) started in 2011 were yet to be completed as of March 2014.

Government replied (December 2014) that follow up action will be taken by DAME for completion of these works.

[49] One Assistant Professor without any PG in *Rachanasharir* department, one Assistant Professor in *Kriyasarir* department with PG in *Rasasastra* and one Assistant Professor in *Dravyaguna* with PG in *Kayachikitsa* (GAC Thiruvananthapuram), one Professor in *Prasuthitantra* department with PG in *Kayachikitsa* and one Professor in Basic Principles department with PG in *Kayachikitsa* (VPSV Ayurveda college, Kottakkal) and one Assistant Professor in Panchakarma department with PG in *Manovigyan* and one Assistant Professor in *Roganidana* department without any PG (Ayurveda college, Ollur)

[50] GAC Thiruvananthapuram, VAC Ollur and VPSVAC Kottakkal

[51] As per Special Rules, for appointment of Lecturer by direct recruitment in the absence of person with Postgraduate Degree in the concerned subject, person with Graduation will be considered

[52] Construction of Ladies Hostel, Construction of a multi-storied building for laboratory and diagnostic centre and Construction of Sewage Treatment Plant at Panchakarma Hospital

3.11.2 Deficiencies in infrastructure in college hospitals

Audit found several deficiencies in infrastructure facilities in the test checked colleges and attached hospitals. It was noticed that the W&C hospital, Poojappura, (*Prasuthithantra* and *Kaumarabhritya* departments of GAC Thiruvananthapuram), with 80 beds including the Ayurveda paediatric ward meant for treating children with complaints of Developmental Diseases, Cerebral Palsy and Autism was functioning in two old tiled roof buildings which were congested due to lack of space while a new four-storied building constructed to increase the bed strength and to accommodate the operation theatre and labour room and inaugurated in October 2013, was not yet put to use as of December 2014 except shifting the OP department.

Congested paediatric ward in Government Ayurveda College Hospital for Women & Children, Thiruvananthapuram

The Government Ayurveda College Panchakarma hospital, under the Panchakarma Department of GAC Thiruvananthapuram was also functioning in an incomplete four storied building constructed in 2011. The building was found damp and wet as rainwater was flowing through the duct provided for electric connection and the opening provided for the staircase. Solid waste was found dumped in the compound near *Kashayam* room.

Government stated (December 2014) that the new building at W&C Hospital, Poojappura can be used only on creation of new posts. But due to resource constraints, Government could not sanction the posts.

Reply of the Government is not acceptable as the shifting of the 80 bedded hospital from the existing two old tiled roof buildings to the newly constructed building could have been made without creation of additional posts. Failure to utilise the building resulted in denial of better facilities to the patients.

3.11.3 Deficiencies of Equipment

During physical verification of facilities in test checked College Hospitals, Audit noticed deficiencies in equipments as detailed below in **Table 3.3**:

Table 3.3: Deficiency in equipments

Name of Institution	Deficiency
VPSV Ayurveda College hospital, Kottakkal	Ultra sound scanner was not working since 2009. The ECG machine procured in January 2014 was not installed due to lack of space. There was no generator facility in the hospital.
W&C Hospital, Poojappura, Thiruvananthapuram	The Ultra sound scanner in the hospital was not put to use for lack of PNDT registration.
	Hospital furniture procured for the new four storied building were found dumped in the building which includes 56 cots, 65 beds, 75 pillows, 55 bedside lockers pending allotment to new wards.
	Equipment found dumped in the building include items like Anaesthesia Machine, Spot light for labour room, Pulse Oxymeter Infant warmer, Phototherapy unit, etc. pending utilization.

Government admitted (December 2014) the facts and stated that action will be taken on these issues.

3.12 Research and Development

3.12.1 Functioning of Research Units

Research and Development activities under the Government sector in Ayurveda were carried out in institutions under the DAME like the Patent Cell, the Pharmacognosy and Drug Standardization Units attached to the GAC Thiruvananthapuram and also the Research Cell on Sports Ayurveda under the DISM.

3.12.1.1 Pharmacognosy Unit

A Pharmacognosy[53] Unit for conducting research on medicinal plants with special focus on their identification according to the Ayurveda texts was functional (since March 1966) in the GAC Thiruvananthapuram. As of December 2014, the Unit published 13 volumes of Pharmacognosy of 198 medicinal plants. Even though Pharmacognosy included study of physical, chemical, bio-chemical and biological properties of drugs, records produced to Audit revealed that the Unit conducted studies of only biological properties of the plant. It was admitted by the Unit that physical, chemical and bio-chemical properties of Ayurveda drugs were not studied

[53] The word "pharmacognosy" is derived from the Greek words 'pharmakon' (drug), and 'gnosis' (knowledge). The American Society of Pharmacognosy defines pharmacognosy as "the study of the physical, chemical, biochemical and biological properties of drugs, drug substances or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources."

due to lack of infrastructure and manpower. The unit in its first publication itself had mentioned that the identity of a plant can be fixed only on study of all properties including chemical, and in the absence of such a study, it is not possible to differentiate any spurious specimen from the genuine one. Thus, a study conducted at Pharmacognosy unit is not comprehensive without analysis of chemical properties.

Government replied (December 2014) that the existing physical facilities were not adequate to conduct the research work as pointed out by Audit. However, Government did not clarify the measures taken to strengthen the unit.

3.12.1.2 Drug Standardization Unit (DSU)

Government established (February 1974) a Drug Standardisation Unit (DSU) under the control of the Principal, GAC Thiruvananthapuram with the objective of evolving methods for standardisation of Ayurveda drugs by prescribing standards of raw material, methods of manufacture and standardization of finished products. The DSU was directed to conduct research on items which were not attended to by the Central Council for Research in Indian Medicine & Homeopathy (CCRIMH). Under the D&C Act, Ayurvedic Pharmacopoeia of India (API) publications (part I and II) are the books of standards for single drugs and compound formulations included therein and would be official.

The DSU published six monographs comprising of 70 medicinal plants/drugs. Though the API was a collective work of various laboratories, no efforts were made by DSU to contribute to API. No action was initiated to obtain technical or financial assistance from GOI for conducting the research activities, though the Department of AYUSH had schemes to provide financial assistance for drug standardisation like 'Extra Mural Research', Scheme for evolving Pharmacopoeial Standards for Ayurveda drugs and Standardised Operating Procedures of Manufacturing Processes of Ayurveda drugs.

Government stated (December 2014) that research methodology of PG students and research works in standardisation are going on in DSU. Government admitted that orders were not issued to DAME to contact API for encouraging the function of DSU.

As DSU has not initiated any action to incorporate their works in API publications, their works have no acceptance at national level and no legal validity.

3.12.1.3 Research Cell in Sports Ayurveda

A Research Cell for Indian System of Sports Medicine was established (December 2009) under the DISM to manage sports injuries, to improve physical fitness of athletes using Ayurveda treatment, to prepare new formulations and to conduct research works on these purposes. During the period 2009-14, ₹3.61 crore was spent (out of ₹3.70 crore allotted) on various activities of the Research Cell, but there were no recorded data on any research work carried out by the Research Cell as of December 2014.

The Ayurveda Sports Medicine State Level Committee (SLC) entrusted the work (August 2011) to the Chief Co-ordinator, Sports Medicine for the manufacture of Sports Special Medicines. SLC awarded (March 2012 & September 2012) the manufacture of sports special medicines (*Thailam I, II, III and Special Lepam*) to the Ayurveda Oushadha Nirmana Vyavasaya Co-operative Society Ltd., Thiruvananthapuram. Necessary clinical trials were not conducted and ethical clearances for these medicines as per World Health Organisation guidelines were not obtained. Audit further noticed that there was no system in place to ensure the quality of raw materials used in the manufacture of these medicines and to conduct quality tests for toxicity/heavy metal in the manufactured drugs.

Government stated (December 2014) that the studies conducted on special medicines prepared by the Research Cell in Sports Ayurveda during 2012-13 and 2013-14 were on a pilot basis and no ethical clearance was needed for pilot studies. Government also stated that an ethical committee would be constituted with immediate effect and the department of ISM would subject future studies to the committee for clearances. It further stated that a High Level Committee headed by the Joint Director of ISM and Chief Co-ordinator had been constituted to effect the procurement and preparation of research medicines.

The department of ISM had however, not produced any documents on conduct of research works with reference to the objectives and efficacy of Sports Ayurveda Medicines.

3.12.2 Patent Cell

Traditional Knowledge Digital Library (TKDL) was a collaborative maiden Indian venture between the Council of Scientific & Industrial Research (CSIR), Ministry of Science and Technology and Earth Sciences and Department of AYUSH to prevent misappropriation of traditional knowledge belonging to India at International Patent Offices.

Government of Kerala constituted (July 2003) a 'Patent Cell' in the DAME to take steps for acquiring patent rights on Ayurveda concepts. The Patent Cell was to conduct survey, identify, collect and digitise Ayurveda literature documents. The Cell has digitised 2505 formulations and five books were published.

Audit noticed that no formulations digitised by Patent Cell were incorporated in the database of TKDL and thereby protection of Traditional Knowledge digitised by the Patent Cell was not ensured. Audit also noticed that no Patent rights for any of the formulations digitised were acquired as of December 2014.

Government stated (December 2014) that the issue was raised before Department of Industrial Policy and Promotion, GOI which is dealing with all Intellectual Property Rights and response from GOI is awaited.

The fact remains that the traditional knowledge digitised by the Patent Cell remained unprotected as of December 2014 as the database was not linked to the TKDL and thus the work of Patent Cell became infructuous.

3.12.3 Conservation of Manuscripts

The Publication Division of the GAC Thiruvananthapuram has a collection of 224 manuscripts out of which 99 were deciphered (September 2014). The National Mission for Manuscripts had stipulated Basic Minimum Standards for Conservation of Manuscripts such as protection from fire, water, natural calamities, Insect attack, microbiological attack, dust, environmental pollution and light, fluctuations in temperature and relative humidity, etc. Audit scrutiny revealed the following instances of non-compliance with guidelines in conservation of these invaluable assets.

- Quarantine room or any procedure for checking the newly acquired manuscripts for insect or fungus attacks was not in place.
- The manuscripts were found dumped in a cupboard and no methods were adopted for the scientific preservation of these manuscripts. Training was also not imparted to the staff of the Publication Division on safe handling of the manuscripts.

Ayurveda manuscripts dumped in cupboard

- Index register was not maintained to show the provenance of these manuscripts.

Non-compliance of guidelines laid down by the National Mission for Manuscripts for conservation of the invaluable manuscripts may result in future risks of deterioration of manuscripts. The Head of Publication Division admitted (September 2014) the audit observations on the shortcomings.

Government stated (December 2014) that the Manuscripts in the Publication Division are being kept in safe custody in order to ensure safety from fire, water, natural disasters, insect bites, light, pollution, etc.

The GOK however, did not offer assurance on adhering to guidelines laid down by the National Mission for Manuscripts for conservation of the manuscripts other than that relating to safe custody.

3.12.4 Cultivation and promotion of medicinal plants

Medicinal Plants constitute an important component of the plant resource spectrum of Kerala and plays a vital role in Ayurveda system of treatment. Over 150 species of plants that were either indigenous or naturalised in Kerala were used in the ISM. About 65 *per cent* of plants required for Ayurveda medicine are found in Kerala.

Under the Centrally sponsored scheme of "National Mission on Medicinal Plants", implemented by National Medicinal Plant Board , Department of AYUSH, financial as well as management support was available to the Growers/ Farmers/Self Help Groups (SHGs)/Growers Co-operatives, etc. for establishing model/small nurseries, cultivating species critical to AYUSH system and storing and processing including quality testing. The SHM was the nodal agency for implementing the scheme.

During 2009-14, the Mission extended financial assistance of ₹2.31 crore to Growers/Farmers/SHGs/Growers Co-operatives for establishing model/small nurseries. Twenty three model nurseries and 38 small nurseries were established during the same period. However, one[54]out of two nursery units visited (July 2014) by Audit team in Thiruvananthapuram District was found to be defunct. Audit noticed that there was no proper system in the SHM to check periodically the functional status of assisted nurseries.

SHM replied that the nursery was functional during 2011-12 and lack of proper technical knowledge and poor administration had led to the closing down of the unit. Similarly, though the SHM extended financial assistance for cultivation of species critical to AYUSH, there was no proper mechanism to ensure effective utilisation of financial assistance for the intended purpose as neither the SHM nor the individual had any details of the quantity of species cultivated and marketed.

Government stated (December 2014) that there was no proper guidance or instruction from National Medicinal Plants Board to conduct periodic monitoring of the activities implemented in the entire State and that the matter would be considered in future projects. Government also stated that the SHM does not have enough manpower or budget allocation for collecting information from the farmer's field on quantity of raw drugs marketed by them and also that SHM have instructed the farmers to maintain a register comprising data on quantity of plants cultivated and marketed.

The reply is not tenable as extending financial assistance without monitoring mechanism in place is not an acceptable practice.

3.13 Ayurveda medical tourism

Ayurveda is one of the principal tourism products of Kerala. However, the Tourism Department did not possess data on the number of foreign/domestic tourists who visited Kerala for treatment/rejuvenation therapy in Ayurveda. A survey conducted for the years 2010-11 to 2012-13 by a private agency[55] initiated by the Tourism

[54] Government Mental Health Centre, Thiruvananthapuram
[55] M/s. Great India Tourism Planners and Consultants (GITPAC) International, Thiruvananthapuram

department of the State revealed that, of the total International tourists who visited Kerala, 8.85, 6.44 and 3.92 *per cent* respectively visited for Ayurveda treatment and the percentage of domestic tourists visited Kerala for health treatment was 1.28, 3.19 and 2.96 *per cent* respectively. The survey thus indicated a downward trend in the number of foreign tourists who visited Kerala for Ayurveda treatment/ rejuvenation.

3.13.1 Ayurveda Massage Centres

Projection of 'Ayurveda' as USP[56] of Kerala resulted in mushrooming of Ayurveda massage centres in and around the major tourist destinations in the State. Since most of these centres operated according to their own terms and often flouted safety and health regulations, the Government of Kerala initiated (January 2002) a scheme *viz.*, 'Scheme for Classification of Ayurveda centres'. Under the Scheme, the Ayurveda centres were to be classified into 'Olive leaf' and 'Green leaf' categories on fulfilment of prescribed conditions *viz.* Qualified Physician, Therapist, etc. and based on the recommendations of a committee. There were 71 classified centres in the State in the private sector, 49 with Green leaf certificate and 22 with Olive leaf certificate (September 2014).

As per Scheme guidelines, the officers of Department of Tourism or any other officer deputed by the Department were to inspect the centres from time to time with or without prior notice for ensuring the quality standards of the centres. Audit noticed that inspections of the Ayurveda Centres were conducted by Tourism Department only at the time of granting the approval. No further periodical inspection was conducted to ensure the continued maintenance of stipulated quality standards by these centres.

Director of Tourism Department stated (December 2014) that inspection of classified centres is to be conducted when complaints are received against them. Since no complaint is received against classified centres, the department does not conduct surprise visit in them and that department is now proposing to conduct periodic inspections in the classified units in the district level to ensure quality.

3.13.2 Accreditation by National Accreditation Board for Hospitals (NABH)

NABH offered accreditation to wellness centres (Ayurveda hospitals, Spas, Ayurveda Centres, Yoga & Naturopathy centres, Fitness centres, Skin care centres, etc.) possessing standards of quality prescribed by it after evaluation of such standards. NABH accreditation was offered to assure the tourists and locals that the centres were providing services as per global standards. These accredited wellness centres were entitled to incentives for accreditation by Ministry of Tourism for listing on Incredible India website, display of NABH Mark of Excellence and logo approved by Ministry of Tourism at appropriate locations, financial support from GOI for participation in the international wellness tourism events, etc. These would

[56] USP - Unique Selling Proposition

facilitate creation of awareness of such centres among potential tourists and eventually help to attract tourists and thereby to promote Ayurveda.

As of March 2014, only five such wellness centres in the private sector in the State had obtained NABH accreditation. Audit noticed that no institution under Government sector obtained NABH accreditation as of March 2014.

3.14 Conclusion

Failure of GOK/NRHM to furnish Utilisation Certificates to GOI for funds already received resulted in the State losing GOI assistance of ₹12.75 crore receivable during 2012-14. Failure to set up new departments for Preventive Ayurveda, Yoga, Naturopathy and Vishachikitsa in GAC Thiruvananthapuram resulted in refund of GOI assistance of ₹1.5 crore in May 2013. DISM did not fix any standards for infrastructure facilities and services in hospitals/dispensaries. Lack of infrastructure and deficient human resources affected the quality of services delivered by the Government Ayurveda hospitals and dispensaries. Among the test checked hospitals, GAH Punnapra had the lowest bed occupancy of 33 *per cent*. The hospital neither provided diet to its patients nor therapy to male patients due to absence of Cook/male Nurses/Therapist. In seven test checked hospitals, there was no heating facility in the therapy/treatment rooms forcing patients to bring fuel and stove for heating *Thailam* for oil massage. Drugs procured from Oushadhi for free distribution to patients in hospitals were not tested for presence of heavy metals, aflatoxin, toxicity and pesticide residue. The DSU attached to the GAC Thiruvananthapuram obtained ₹1.50 crore for setting up a DTL for ASU drugs in the State. However, the DSU continues to function as a research unit for supplementing academic activities and not as a DTL for ASU drugs in the State. GOK could not also enforce its own orders for transferring control of the DSU to the DDC (Ayurveda). The DISM did not enforce provisions of the Kerala Ayurveda Health Centres (Issue of License and Control) Act, 2007 stipulating the issue of licenses to Ayurveda Health Centres. The indents for departmental/scheme supply and LSGI supply of Ayurveda drugs were prepared without assessing the consolidated annual requirement. Database of 2505 Ayurveda formulations created by the Patent Cell under DAME remained unprotected as the database was not linked to that of TKDL.

3.15 Recommendations

State Government may ensure:

- Upgradation and standardization of Ayurveda hospitals and dispensaries in the State in a specific time frame;
- Compliance with its order of January 2013 requiring the Drug Standardization Unit and its employees to be placed under the administrative control of the DDC (Ayurveda) for testing quality of ASU medicines;

- Enforcement of provisions of the Kerala Ayurveda Health Centres (Issue of License and Control) Act 2007 requiring DISM to issue licenses to these Centres after inspection and certification;
- Preparation of an EDL for Ayurveda drugs in conformity with the EDL published by GOI and preparation of purchase indents based on the list and actual requirements of hospitals;
- Scientific assessment about manpower requirement and appropriate placement; and
- Development of Pharmacopoeia for Ayurveda drugs with details of proportion of the ingredients.

CHAPTER IV

INDUSTRIES AND INFORMATION TECHNOLOGY DEPARTMENT

Information System Audit of 'FRIENDS, an e-Governance initiative of Government of Kerala'

Highlights

'FRIENDS', a key mission mode e-Governance (G2C) initiative of Government of Kerala, is a joint venture of the Department of Information Technology (IT) and Local Self Government Institutions (LSGI). This was started as a pilot project (FRIENDS Janasevanakendram), a single window integrated remittance centre, to facilitate residents to pay their utility bills, tax and other dues to Government without any extra cost at Thiruvananthapuram district in the year 2000. It was rolled out to the remaining 13 districts of Kerala in the next year 2001. The deficiencies noticed in planning, system design, organisational and management controls are given below:

The application was developed without preparing User Requirement Specification (URS). Even though envisaged to be an automated system, non-adherence to database normalisation principles, poor system design and inadequate capturing of vital data necessitated manual intervention, which led to control failures and embezzlement of money.

(Paragraphs 4.9.1, 4.9.2 & 4.9.3)

There were persistent delays in remittance of money collected from the FRIENDS Centres to Bank. The accumulated amount of money kept out of public exchequer was ₹15.21 crore and ₹11 crore at Ernakulam and Kozhikode Centres respectively. The total accumulated amount of money out of public exchequer from all the Centres was ₹136.02 crore.

(Paragraphs 4.9.3.1, 4.9.3.2 & 4.9.3.3)

Non-constitution of IT steering committee led to design of the system without proper vision and focus. The application was not upgraded in line with the technological advancements in the external environment.

(Paragraph 4.10.1.1)

No norms were fixed for the time required for completing a transaction resulting in large variation in the number of transaction of bills by various Service Officers.

(Paragraph 4.10.3)

Absence of change control mechanism resulted in discrepancies in the system generated reports and erroneous debit of ₹10.74 lakh from FRIENDS accounts. Similarly, another change made in the application without test run resulted in variation as high as ₹1.82 crore in different system generated reports.

(Paragraph 4.10.5)

System could not achieve the goal of providing single window remittance centre to the public due to lack of timely managerial interventions and coordination with participating agencies.

(Paragraph 4.13)

4.1 Introduction

FRIENDS (Fast Reliable Instant Efficient Network for Disbursement of Services), a key mission mode e-Governance (G2C) initiative of Government of Kerala and a joint venture of the Department of Information Technology (IT) and Local Self Government Institutions (LSGI), was started as a pilot project in the year 2000 in Thiruvananthapuram district (FRIENDS Janasevanakendram). This application provided facilities to the residents of Kerala State to pay their utility bills, tax and other dues to Government through a single window integrated remittance centre, without any extra cost. It was rolled out to the remaining 13 districts of Kerala by 2001.

The IT Department is responsible for running the Project in the space provided free of rent by LSGIs. Departments of Revenue, Motor Vehicles, Electrical Inspectorates, Civil Supplies, Kerala Police and agencies like KSEB[57], Kerala Water Authority[58], BSNL[59], Kerala State Cultural Activists Welfare Fund Board and Universities of Kerala and Calicut and Mahatma Gandhi University are the participating Departments/Agencies. Among these Departments/Agencies, except BSNL, all others provide their staff members on working arrangements and the expenditure towards their pay and allowances are met by the parent Departments/Agencies concerned. As BSNL does not provide staff members, they pay commission[60] to the Project for collection pertaining to BSNL bills.

The application software titled FRIENDS developed by Centre for Development of Imaging Technology (C-DIT[61]) in client server architecture was deployed as local area network application software and put to use from 2000.

[57] Kerala State Electricity Board Ltd is a public sector agency under the Government of Kerala that generates and distributes the electricity supply in the State

[58] Kerala Water Authority was established on 1 April 1984 as an autonomous body of Government of Kerala by converting the erstwhile Public Health Engineering Department, for the development and regulation of water supply and waste water collection and disposal in the State of Kerala

[59] Bharat Sanchar Nigam Limited (BSNL), incorporated on 15 September 2000, took over the business of providing of telecom services and network management from the erstwhile Central Government Departments of Telecom Services and Telecom Operations

[60] Commission of ₹5 per each BSNL Mobile/CDMA phone bill and ₹6 per each BSNL Landline phone bill

[61] Centre for Development of Imaging Technology (C-DIT) established in 1988 by Government of Kerala with a vision to ensure advancement of research, development and training in imaging technology

Subsequently, a centralised web based re-engineered software titled FRIENDS Re-engineered Enterprise Enabled System (FREES), developed by National Informatics Centre (NIC) on JAVA platform, was launched in 2010 in Thiruvananthapuram district and rolled out to all other districts by March 2013. FREES package runs with the operating system Red Hat Enterprise Linux Server Release 5.8. PostgreSQLPlus Standard Server 9.2 is used in database servers, JBoss EAP 5.1 in application servers and Apache 2.2.3 in web servers. The system is hosted in the State Data Centre-2 at Thiruvananthapuram and connectivity to seven out of fourteen Janasevanakendrams is established through BSNL leased line, six through KSWAN[62] and the remaining one uses both the KSWAN and BSNL leased line. Hardware included 6 Intel Xeon servers and 2 AMD Opteron servers for the centralised web-based application (2 web servers, 3 application servers, 2 database servers and 1 test server).

4.2 Organisational Setup

Kerala State Information Technology Mission (IT Mission), an Autonomous Body under the Government of Kerala, is the implementing and monitoring agency of FRIENDS project. This project is managed by Director of IT Mission, who is assisted by Mission Coordinator (FRIENDS), who in turn coordinates activities of all the Centres.

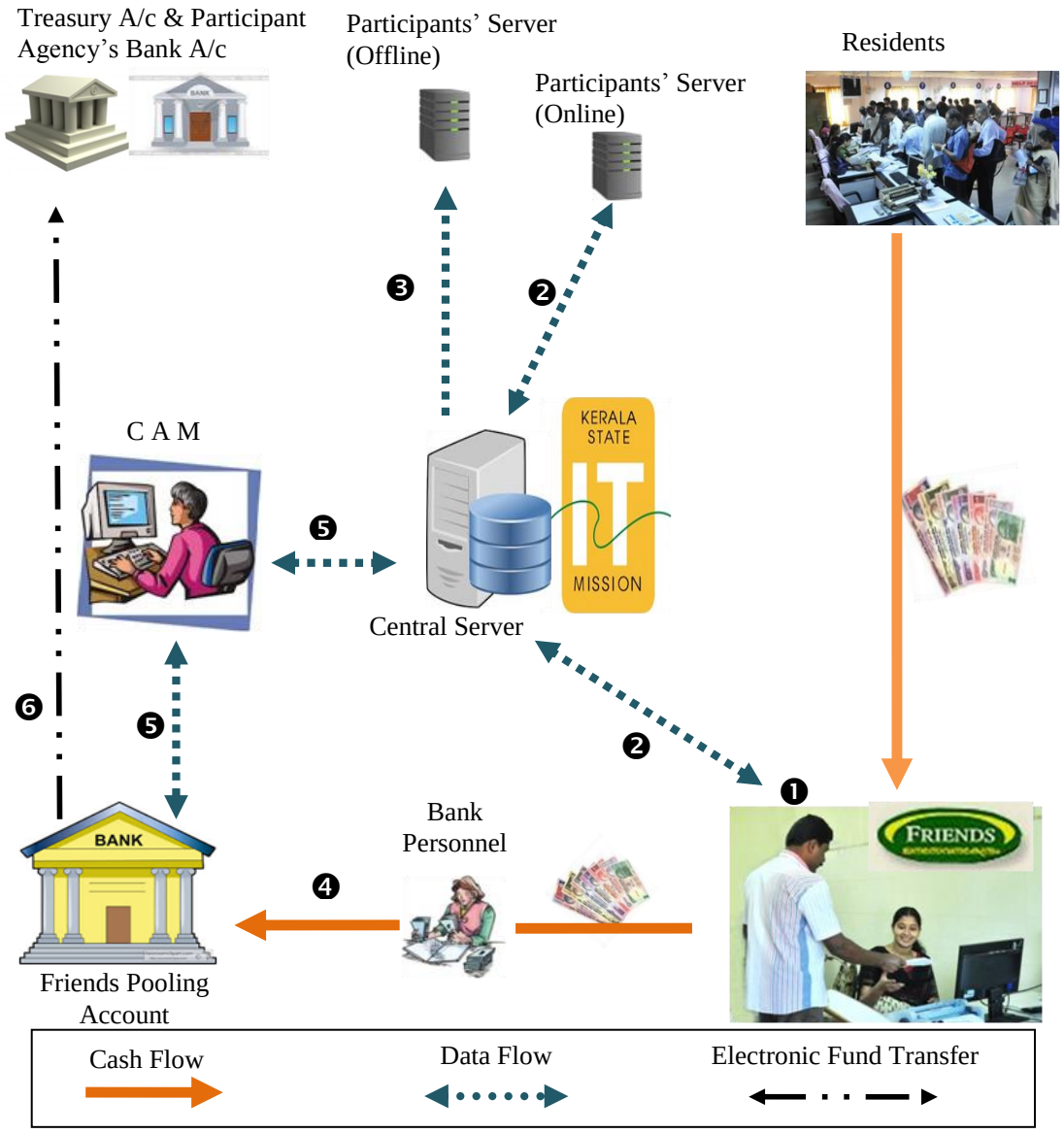
There are fourteen FRIENDS Janasevakendrams, one each in every district headquarter. These Centres are supervised by two Project Managers (PM), who are in charge of each shift. The State Bank of Travancore deputes personnel to collect money from all Centres and credits in FRIENDS Pooling account. In variation to other Centres, Janasevanakendram Thiruvananthapuram has one Central Accounts Manager (CAM). As the application is not equipped with the provision for real time/online communication with the bank data, CAM is entrusted with the responsibility of reconciling the amount reflected in the Pooling account with that of the FREES application.

[62] Kerala State Wide Area Network (KSWAN) is envisaged to be the core common network infrastructure for e-governance and the State Information Infrastructure, connecting all the 14 districts including 152 Block Headquarters.

4.3 FREES data flow and cash flow

Chart 4.1

Chart showing the cash flow and data flow



❶ Residents pay bills in various FRIENDS centres.

❷ Service Officers access central server for bill transaction. Where real-time server connectivity is established, central server fetches data from Participants' servers and update the participants' servers with transaction details.

❸ Collection details are sent to Participants, which are offline, for updating at their end.

❹ Bank personnel collect money and deposit in FRIENDS Pooling A/c.

❺ CAM accesses FREES data and reconciles with Bank data and authorises electronic fund transfer.

❻ Government account and the participating bank accounts, as the case may be, are credited by debiting the Pooling A/c.

(Source: Information obtained from the IT Mission Headquarters)

4.4 Audit objectives

The objectives of the information system audit are to assess whether:

- The objective of FRIENDS/FREES to facilitate residents to remit taxes and other utility payments due to Government through a single window payment system has been achieved;
- Collection of dues by the participating departments has improved by partnering with FRIENDS/FREES and
- The system design and the controls provide assurance that the interests of residents and participating departments are protected.

4.5 Sources of audit criteria

- System Requirement Specification (SRS) and Project documentation.
- Minutes and Decisions of the Governing Body and Circulars issued by the Government and IT Mission.
- IT Policy, 2012 of Government of Kerala.
- Best international practices adopted in IT projects contemplated in Guidelines issued by INTOSAI[63] (Information System Security Review Methodology) and ASOSAI[64] (Information System Security Review Methodology) for Information System Audit.

4.6 Scope of audit

Audit analysed the implementation of re-engineered application FREES for the period from June 2010 to March 2014. Audit also analysed the FRIENDS system to assess whether the lacunae in the old system have been addressed in the new application FREES.

4.7 Audit methodology

Audit was conducted during October 2013 to January 2014, and from June to July 2014. An entry conference was held with the Secretary to Government, Information Technology on 4 October 2013. In addition to the IT Mission in Thiruvananthapuram, audit team visited Janasevanakendrams in Thiruvananthapuram, Idukki, Ernakulam, Malappuram, Kozhikode and Kannur for verification of the working of the system and held interviews, on the basis of

[63] The International Organisation of Supreme Audit Institutions (INTOSAI) operates as an umbrella organisation for the government audit community. It provides an institutionalised framework for supreme audit institutions to promote development and transfer of knowledge, improve government auditing worldwide and enhance professional capacities, standing and influence of member SAIs in their respective countries

[64] ASOSAI (Asian Organization of Supreme Audit Institutions) is one of the Regional Groups of the International Organization of Supreme Audit Institutions (INTOSAI)

questionnaire prepared for the purpose, with end-users to assess the usefulness and user- friendliness of the software. A beneficiary survey[65] was also conducted with residents to assess the level of services rendered by the project, and the satisfaction of the residents about this project.

An exit conference was held (9 December 2014) with the Principal Secretary to Government (IT), wherein the audit findings were discussed. Views of the State Government and their replies have been incorporated in the report suitably.

4.8 Acknowledgement

Audit would like to acknowledge the cooperation extended by the Principal Secretary to Government (IT), Chairman and Director of IT Mission, officers and staff, and the heads of Janasevanakendrams visited by audit team.

Audit Findings

4.9 Poor System design

4.9.1 User Requirement Specification (URS) and System Requirement Specification (SRS)

The properly documented User Requirement Specifications (URS) obtained from users and System Requirement Specifications (SRS) by the software development team ensure that the needs of the users of the system have been taken care of and the software developed meets the business requirements. However, Audit noticed that User Requirement Specifications were not prepared. System Requirement Specifications for the re-engineered application FREES was thus prepared without obtaining the requirement of all stakeholders. In the absence of URS, Audit was unable to assess the achievement of intended benefits of the project.

4.9.2 Lack of system automation

Even though FREES is a centralised web based application, Audit noticed manual interventions in the processes, which could have been avoided with proper system design. These issues pertained to the core functionalities of the application which led to serious control failures. The issues identified in test check are given below:

- Audit noticed that the money remitted in various FRIENDS Centres was being collected by the banking personnel deputed by concerned bank branches. The collected amount is transferred to the respective account of FRIENDS Project (i.e. Pooling account maintained at State Bank of Travancore, Thiruvananthapuram). In the absence of proper planning, the system was not automated to ensure electronic data interchange[66] with the

[65] The questionnaire prepared for the survey is given in **Appendix 4.1** and the result of survey in **Appendix 4.2**. Relevant portions of the result of survey have also been included along with audit comments

[66] Electronic data interchange (EDI) is an electronic communication system that provides standards for exchanging data via any electronic means. By adhering to the same standard, two different entities can electronically exchange documents (such as purchase orders, invoices, shipping notices, and many others)

FRIENDS Centre and the bank, instead the CAM was given the responsibility to reconcile the FRIENDS Pooling Account data with that of FREES application manually, which is avoidable.

- BSNL paid commission to the project for collection pertaining to each BSNL bill. The system did not make provision for transferring the net amount to BSNL after deducting the commission due from BSNL automatically. Instead the whole amount was transferred to BSNL, who worked out the commission and this amount was credited to an account exclusively maintained for this purpose by each of the FRIENDS Centres. The money in this account was subsequently credited to Government account and to Akshaya District Project Office. This procedure was not only inefficient, but also prone to misuse and embezzlement. Audit data analysis revealed an embezzlement of ₹3.53 lakh in Kozhikode Centre from this account by drawing personal cheques, which could have been avoided with proper system design.

4.9.3 Non-adherence to database normalisation principles and improper designing of tables

Database Normalisation is the process of organising the fields and tables of a relational database to minimise redundancy. Normalisation usually involves dividing large tables into smaller (and less redundant) tables and defining relations between them. Audit noticed that database normalisation principles were not followed and there were deficiencies in designing of tables as detailed below:

- The primary transaction table named 'Collection_Master' contained 1,08,76,286 records as on 8 April 2014 and audit analysis has revealed that of these, 97,32,401 records related to the financial year (FY) 2013-14, 9,72,051 records related to the FY 2012-13, 13,107 records pertained to the FY 2011-12 and 758 records related to the FY 2010-11. Storing of these records in the respective tables/databases for each of the past financial years as historical data, could have increased the processing speed.

- The transaction table was used to store bill collection details (Collection_Master) that automatically captured the date and time of collection in one of its fields (Updated_On), with which the collection pertaining to each day and shift were identified. There was another table (Bank_Remittance) to store particulars about crediting of the collected money into the bank account. Instead of storing the date of collection, 'Bank_Remittance' table had two fields to store 'collection-from-date' and 'collection-to-date'. Audit observed that due to this design deficiency, relationship between these two tables could not be established.

- Similarly, Payment_To_Departments table stores payments to participating departments/agencies. Here also direct relation of this table was not established with the collection table so as to enable generation of reports of date-wise payments to departments concerned.

Due to the deficiencies in the design of tables as mentioned above, meaningful MIS reports for monitoring the timely remittance of money collected from FRIENDS Centres to the banks and to the participating departments could not be generated. This along with lack of proper system automation (as mentioned in paragraph 4.9.2) resulted in instances of embezzlement and delay in remittance to bank as detailed below.

4.9.3.1 Embezzlement of cash - FRIENDS application

In the erstwhile FRIENDS application, Project Manager in Ernakulam embezzled an amount of ₹15.99 lakh relating to the collection of 18 August 2012. The FRIENDS application did not have provision for capturing details of date of remittance into bank, which was one of the reasons due to which the embezzlement could not be detected. It was detected only after BSNL made a formal representation to the Director of IT Mission on non-receipt of the amount due to them. This amount has not been remitted till date (December 2014) and the notional interest at the rate of 18 *per cent*[67] *per annum* on account of this would work out to ₹6.96 lakh as on 1 January 2015.

Audit noticed that, during this period, a whistle-blower was repeatedly reporting to the IT Mission about the suspected fraudulent activities of the Project Manager in the Centre. The whistle-blower sent six intimations[68] to the IT Mission during the period from March to October 2012. All of these letters were ignored and actions not initiated until BSNL made the complaint.

Audit also noticed that the Project Manager deliberately defaulted in depositing the collected money into the bank by providing misleading information to the bank. During the period from January to October 2011 there were defaults in remitting cash once or twice a month, which increased to 16 defaults in a month (October 2012).

Audit analysis relating to Ernakulam Centre for the period from January 2011 to March 2013 revealed that in 163 instances there were delays in remitting cash to bank. Audit analysis further revealed that during this period not only the frequency of non-remittances increased, but also the number of days the money retained by the Project Manager (PM) also increased. In four instances, the money retained by the PM ranged from 35 days to 287 days as shown in **Table 4.1.**

Table 4.1: Details of remittances of cash into bank, where the delay exceeded one month

Collection date	Remittance date	Amount *(₹ in lakh)*	Delay in days
28/05/12	12/03/13	9.36	287
27/09/12	12/03/13	27.14	165
21/10/12	27/12/12	3.52	66
23/04/12	29/05/12	13.05	35

(Source: Analysis of data obtained from FRIENDS Centre, Ernakulam)

[67] Penal interest is generally charged at the rate of 18 *per cent per annum*.

[68] E-mails dated 20 Mar 2012, 29 Mar 2012, 23 Apr 2012 and letters dated 10 Oct 2012, 27 Oct 2012 and 30 Oct 2012

From November 2012, the money kept out of public exchequer was as high as ₹87.33 lakh with an average of ₹33.98 lakh per day. Data analysis revealed that owing to delay in bank remittances from the above 163 instances, the accumulated amount of money kept out of public exchequer was ₹15.21 crore in Ernakulam Centre alone with consequent notional loss of interest.

The Government stated (November 2014) that disciplinary and criminal procedures were initiated against the erring Project Manager. Actions were also initiated to recover the short remittance from the offender. The reply is not tenable in audit as the project has quantified the embezzled amount as only ₹15.99 lakh and has not addressed the issue of rectifying the deficiencies in the system. Some of the systemic issues, which caused the embezzlement, are still present in the newly developed and implemented re-engineered application FREES.

4.9.3.2 Embezzlement of cash –FREES application

The re-engineered application FREES was launched with the aim to facilitate central monitoring and to manage the daily collection at all the Centres effectively. However, Audit observed that in view of the system deficiencies referred to in the paragraphs 4.9.1, 4.9.2 and 4.9.3, delays in remittance of cash to bank continued, which has resulted in embezzlement of cash at Kozhikode Centre.

Consequent on the media report on embezzlement of cash at Ernakulam Centre and having learnt about the delay in remittance of cash at Kozhikode Centre, the Inspection Wing of the Finance Department of Government of Kerala made a surprise visit to Kozhikode Centre on 8 November 2013. The physical verification of cash at the Centre revealed cash deficit of ₹1.01 lakh, which has not been remitted till date (December 2014).

Audit data analysis revealed that there were 157 instances of delay in remittance of cash into bank during the period since the installation of FREES (16 January 2013) in Kozhikode Centre till the Project Manager was booked on 8 November 2013. The delays ranged up to 9 days. During this period, from the above 157 instances, the accumulated amount of money kept out of public exchequer was ₹11 crore with consequent notional loss of interest.

The Government stated (November 2014) that criminal procedures were initiated against the erring Project Manager. The reply is not tenable in audit in view of the fact that the reply is silent on mitigating the risk by resolving system deficiencies, which cause these embezzlements.

4.9.3.3 Delay in remittances into bank

Analysis of FREES application data revealed delays in remittances of money collected to bank in 2,749 instances. The delay ranged from one to 30 days. Owing to delay in bank remittance, the accumulated amount of money kept out of public exchequer from all the Centres was found to be ₹136.02 crore[69] with consequent notional loss of interest till the end of financial year 2013-2014. Audit cannot rule

[69] This amount includes ₹11 crore referred to in the previous paragraph

out the possibility of embezzlement of cash/ utilizing Government money for private use during these periods.

4.9.4 System deficiencies resulting in data loss

Data loss is an error condition in information system in which information is destroyed by failures or neglect in storage, transmission, or processing. Analysis by audit has revealed system deficiencies resulting in data loss and the examples are given below:

- One user identified by the code "SSK" did not log in to the system on 12 May 2013 as per the login table, whereas the same user collected money on the same date as seen from the collection table.
- As per the data available in the login table, the user "SKA" logged in to the system on 22 March 2010 only during the period from 09:20:45 to 09:26:07, 09:26:20 to 09:38:40 and from 14:26:21 to 14:29:36. However, as per the data available in the collection table, the same user collected 43 bills at 09:39:13, 09:47:48, 09:54:06, etc. Data analysis revealed 304 such cases establishing data loss.
- There were 2684 instances, where those logged in were not seen logged out on the same day.

Loss of data while saving records is a serious risk in an information system, which requires to be addressed immediately.

4.9.5 Non-creation of essential master table

A good database needs to be designed to ensure minimum level of mistakes at the time of data entry. One of the methods to achieve this objective is by designing master tables and transaction tables with a master-detail relationship between master table and transaction table. The master table will work as a lookup table from which proper data values can be picked up in the user interface for restricting junk values to be stored in the tables. Correctness of data in the master and standing files is of vital importance and critical to the processing and reporting of financial and operational data as the information on master files can affect many related transactions and must therefore be adequately protected.

There is a table to store user credentials of every staff member. Data in the designation field of this table is entered/updated by each of the Project Manager whenever a change takes place. As the designation field is an element required for grouping in generation of various MIS reports, uniqueness of data in the field is vital. To ensure unique capturing of data in the field, the designers could have created a table for designation, in which the values were to be stored at the design stage and authenticated at the requisite level. The designation field of user table could be designed as a list box[70] linked to the designation table. Audit noticed that in its absence, the designation of Service Officer was repeated several times with

[70] A list box is a graphical control widget that allows the user to select one or more items from a list contained within a static, multiple line text box

different spellings (like 'Service Officer', 'serviceofficer', 'so', 'sERVICEoFFICER', 'ServiceOfficer', etc.) causing inaccuracies in MIS report generation.

4.9.6 Deficiency in user interface

In the case of Municipal Corporations, where real time connectivity is available (referred to as 'web-driven' mode in the application), when a bill is produced to a Service Officer (SO) for effecting payment, the SO has to input key information, like consumer number, bill number, bill date, district, ward/section/sub section, etc., to fetch the actual bill amount from the server. If responses from the server are not received within a reasonable time owing to high network traffic or unmanageable server hits, the SO has the option to switch to 'customer-driven' mode that would enable him to input the billed amount from the bill. However, Audit noticed that on such occasions, when the SO switched to customer-driven mode, the already entered data was deleted compelling the user to enter the data again.

4.10 Control activities

4.10.1 Managerial Controls

4.10.1.1 Absence of IT steering committee

IT steering committee typically performs the following roles and fulfills these responsibilities:

- Develops policy, develops an operating charter formalizing these roles and responsibilities
- Develops and maintains a set of project "Vision and Goals".
- Manages scope, cost and the project and champions business process improvement
- Coordinates with related projects and programs and obtains support from stakeholders.

However, Audit has observed that the Government of Kerala has not constituted an IT steering committee denying the valuable benefit such a committee could have provided to this project. Being an IT system, there should be constant upgrade of the application in line with the technological advancements. If not, the system will become outdated and lose relevance. In the case of FRIENDS, even basic enhancements like provision for accepting payments through credit/ debit cards could not be incorporated into the application. Though there were instances of multiple embezzlements and delayed remittances due to system design deficiencies, concrete action was not taken to address the noticed system deficiencies, which caused such irregularities.

Automated emails and mobile messaging services for enabling real time managerial monitoring of delay in bank remittances and transfer credit to stakeholders

concerned were not made use of. Real time assessment of server downtime, network traffic, server hits, time taken for each transaction, etc., by utilisation of metadata[71] was not considered. All these point to failure of managerial oversight, which could have been addressed, if an IT steering Committee was in place.

4.10.1.2 Absence of post implementation review

A Post Implementation Review (PIR) is an activity that is carried out after a new business system has been implemented. The objectives of PIR are to assess the system functionality, performance, and cost versus benefits and to assess the effectiveness of the life-cycle development activities that produced the system. The review results can be used to strengthen the system as well as system development procedures and re-engineering. But, Audit noticed that the Management had not conducted any post implementation review of this application.

There was no provision in the erstwhile FRIENDS application to store the details of remitting the collected amounts into banks and their final transfer to the accounts of concerned stakeholders. These deficiencies prevented the top Management from exercising managerial controls. The lacunae in the system paved the way for embezzlement of cash. The deficiency continued to exist in the re-engineered application FREES also.

The Government stated (November 2014) that instructions were issued to the CAM to inform the Management about the delay in remittance on a daily basis. The reply is not tenable in audit in view of the fact that instead of adopting manual monitoring mechanism, the system should provide facilities to generate required MIS reports for enabling centralised monitoring by the Management as envisaged by the re-engineered application software.

4.10.1.3 Revoking of validation controls

Designing of tables without properly relating 'Collection_Master' table with 'Bank_Remittance' table was pointed out in paragraph 4.9.3. Audit noticed revoking of validation controls leading to duplication in dates stored in the table relating to bank remittances. Insufficient validation controls resulted in generating challans again in respect of deposit to banks, which were already generated. Thus overlapping dates caused duplicate values in generation of reports. Data analysis brought to light 2,068 duplicate values in 'collection-from-date' and 2,067 duplicate values in 'collection-to-date' rendering the data useless for any MIS reports.

4.10.2 Delay in collection of cash by designated bank

As per the MoU signed with banks, the banks were to depute personnel to collect money relating to the second shift of the previous day and first shift of the day from all the Centres at 2.00 PM on every bank working day (except Saturday, on which the collection relating to the second shift of the previous day would be collected at

[71] Metadata is 'data about data'. The main purpose of metadata is to facilitate in the discovery of relevant information. Metadata also helps organize electronic resources, provide digital identification, and helps support archiving and preservation of the resource.

11.00 AM) thereby permitting the money collected on Saturday and Sunday to be kept out of the public exchequer. Moreover, during the test check, Audit noticed that in the month of October 2013, out of the 24 bank working days, money was collected only on 16 days from Thiruvananthapuram and Kozhikode Centres. However, no communications were sent to banks either by Project Managers of the respective Centres or by the IT Mission, which indicated lack of managerial controls by the organization.

4.10.3 Human resource management

Human Resource Management (HRM) is the strategic and coherent approach to the management of an organization's most valued assets who individually and collectively are responsible for the effective and proper functioning of IT system.

FRIENDS Centres are supervised by two Project Managers (PM) deputed from participating Departments/Agencies. Service Officers (SO) deputed from participating Departments/Agencies on working arrangement in each District Centre are entrusted with the responsibility of bill collection. Audit observed the following lapses in HRM.

- No qualifications were prescribed for the selection of personnel for the project.
- Responsibilities entrusted were not in line with their qualifications and seniority. As no additional remunerations were offered for higher responsibilities of Project Managers, senior staff members were reluctant to accept responsibilities and juniors were posted as Project Managers, who were unable to exercise supervisory controls over seniors.
- Adequate training was not imparted due to which the staff had to struggle with their work. Training to staff members was imparted only at the launch of erstwhile application FRIENDS (2000-01) and at the installation time of the re-engineered application FREES (2010-11). Audit noticed that in all the six Centres visited, only 22 out of 75 existing PMs and SOs have received training.
- No norms were fixed by the IT Mission for the time taken in processing a bill and hence wide variations existed in average number of bills processed by different SOs. Data analysis for the financial year 2013-14 revealed that variation in average number of transactions per shift made by various SOs in all the Centres was up to three times as shown in **Appendix 4.3.** Audit analysis also revealed frequent long interval between two consecutive transactions made by the SOs, whose average transactions were low, whereas continuous transactions were seen in respect of others in the same Centre on the same day. Some of the illustrative cases are shown in **Table 4.2.**

Table 4.2: Interval between two consecutive transactions

Alappuzha Centre (User 'ANK')		**Kollam Centre (User 'BNG')**	
Transaction Time	**Interval (H:M)**	**Transaction Time**	**Interval (H:M)**
15.05.2013 14:35:25		06.01.2013 11:13:49	
15.05.2013 18:41:43	**4:06**	06.01.2013 12:54:34	**1:40**
22.11.2013 13:07:25		13.01.2013 09:30:57	
22.11.2013 17:43:03	**4:35**	13.01.2013 10:30:08	**0:59**
		13.01.2013 11:58:04	**1:27**
03.01.2014 10:20:43			
03.01.2014 12:44:45	**2:24**	20.01.2013 12:02:56	
		20.01.2013 13:20:25	**1:17**
03.01.2014 12:50:13			
03.01.2014 17:57:46	**5:07**		

(Source: Analysis of data obtained from IT Mission Headquarters)

The Government stated (November 2014) that due to manpower shortage, volunteering senior staff members are given charge of Project Managers. The reply is not tenable in audit, because considering the importance and money value involved in each centre, only qualified persons should be selected as Project Managers.

4.10.4 Lack of documentation and version control

Adequate documentation is one of the essential elements in any application development. Appropriate control over software versions requires sufficient documentation to ensure accuracy in data processing, especially in centralised data processing through web where financial data transfer is involved.

Audit noticed that no version numbers were marked in the application. There was no formal/documented system of complaint booking. Instead, whenever any bugs were noticed, users were lodging their complaints through telephone calls to database administrators. After making changes in the application on the basis of these telephone calls, patches[72] would be installed in the real time system without documentation, adequate test run, obtaining approval at the requisite level and marking the software with a version number. The consequences are pointed out in paragraph 4.10.5.

4.10.5 Absence of change control mechanism

Proper Change Control Mechanism ensures that all changes to system configurations are authorised, tested, documented, controlled, the systems operate as intended and that there is an adequate audit trail of changes. Change control mechanism reduces the possibility of introducing unnecessary changes in the

[72] A patch is a piece of software designed to update a computer program or its supporting data, to fix or improve it. This includes fixing security vulnerabilities and other bugs, and improving the usability or performance.

system without foresight, which could introduce flaws into the system or undo changes made by other users of software. Instances of changes introduced which compromised the objectives of the project are detailed below:

- In test check, Audit observed that changes introduced in the application without adequate testing resulted in erroneous addition of an amount upto ₹0.65 lakh in the daily account due to be transferred to the head of accounts relating to e-District from the FRIENDS accounts. The mistakes continued to occur during the period from 9 January to 7 February 2012 before it was identified by the Project resulting in wrong debit of ₹10.74 lakh from FRIENDS accounts.
- Similarly Audit also observed that the system generated counter-wise collection reports and bank/treasury summary reports did not match after introducing an untested change. This resulted in confusion, because the amount collected from the counters and the amount to be remitted to bank did not tally. The difference between the two accounts ranged from a low of ₹17.91 lakh in Kollam Centre to a high of ₹1.82 crore in Ernakulam Centre.

The details of mismatch found in seven Centres are shown in **Table 4.3.**

Table 4.3: Details of discrepancies between the amounts as per counter wise collection reports and bank/treasury summary reports

Sl. No.	Name of Friends Centre	Amount as per counter wise collection report (₹)	Amount as per bank/treasury summary report (₹)	Difference (₹)
1	Palakkad	3,17,961	57,23,298	**54,05,337**
2	Kollam	1,05,357	18,96,426	**17,91,069**
3	Malappuram	1,27,324	22,91,832	**21,64,508**
4	Pathanamthitta	2,92,853	52,71,354	**49,78,501**
5	Thiruvananthapuram	4,46,052	80,28,936	**75,82,874**
6	Alappuzha	2,67,105	23,38,542	**20,71,437**
7	Ernakulam	10,69,864	1,92,57,552	**1,81,87,688**

(Source: Figures obtained from the respective FRIENDS Centres)

The Government stated (November 2014) that ₹10.74 lakh was re-credited to FRIENDS pooling account. The reply is not tenable in audit since the project has not addressed the issue of introducing appropriate change control mechanism to avoid recurrence of such incidents.

4.11 IT Security

4.11.1 Lack of information security control

Confidentiality, integrity and availability are to be the core principles of information security. Installation of antivirus software[73] helps in reducing threat to data caused by virus attacks. Audit observed the following lapses in this regard:

- The Project did not have an IT Security Officer.
- No mechanism was available for recording and reporting security incidents.
- IT Security instructions were not circulated periodically to staff.
- USB[74] ports were not disabled in four Centres[75].
- Licensed versions of antivirus packages were not installed in any Centre. Freeware antivirus packages were being used in Thiruvananthapuram and Ernakulam Centres, but both these Centres were not updating virus definition files. Systems were seen infected with virus in Malappuram Centre, which was not using antivirus packages. In Ernakulam Centre, virus infection caused non-performance of the system for one day.
- Periodic changes of passwords were not ensured. Data analysis revealed that 366 users had never changed their passwords.
- No instructions were issued on password policy specifying the structure and length of password, changing of passwords, secrecy to be maintained, etc.
- In three out of six Centres visited, user-ids and passwords of Project Managers were shared with others defeating the very purpose of logical access controls.

4.11.2 Failure in deactivating user-ids of retired/transferred employees

Best IT practices demand that in the case of retirement or transfer of employees, the system administrator should immediately deactivate user accounts to prevent unauthorised access to the system. However, Audit noticed that in all the Centres visited, the active user-ids exceeded the total number of the existing personnel as shown in **Table 4.4.**

[73] Antivirus software is computer software used to prevent, detect, remove malicious software and to provide protection from other computer threats

[74] Universal Serial Bus (USB) is an industry standard developed in the mid-1990s that defines the cables, connectors and communications protocols used in a bus for connection, communication, and power supply between computers and electronic devices. USB drives are observed to be highly prone to transmission of virus.

[75] Idukki, Ernakulam, Kozhikode and Kannur

Table 4.4: Comparison of existing active user-ids against the existing personnel

Sl. No.	FRIENDS Centre	Number of active user-ids	Number of existing personnel
1	Thiruvananthapuram	97	29
2	Idukki	11	8
3	Ernakulam	37	13
4	Malappuram	25	15
5	Kozhikode	18	13
6	Kannur	27	15

(Source: Analysis of data obtained from the respective FRIENDS Centres)

Being a web based system, such control deficiencies could provide an opportunity for misuse by unscrupulous persons.

The Government stated (November 2014) that actions were initiated to disable the user-ids in respect of past employees and 323 login accounts have already been terminated. Audit is of the view that continued monitoring is required in this regard.

4.11.3 Inadequate segregation of duties

Segregation of duties ensures that the data stored is authenticated at various levels of supervisory officers. Inadequacies in this would increase the risk of errors being made and remaining undetected, fraud and the adoption of inappropriate working practices.

Project Managers had the exclusive responsibility to open and close shifts in the application by privilages granted to them in the system. Generation of challan for remitting money into bank and confirmation of transfer credit of the same to the FRIENDS Pooling account were also the exclusive duties of Project Managers. But in all Centres visited, Audit noticed that these duties were performed by either System Administrators or Service Officers defeating the very purpose of segregation of duty.

4.11.4 Risk to IT assets

Audit observed that Idukki centre had several shortcomings in the facilities and the infrastructure provided posed risks to IT assets as discussed below:

- The Centre is functioning from a dilapidated building, that could not be closed as shown in picture below. There is only one security guard looking after the centre with no substitute arrangements when he is on leave.

Picture depicts view of Idukki Centre, where the steel shutter cannot be closed. The shutter channel is blocked with wooden logs to prevent collapsing of the damaged steel shutter. Inset picture displays a wooden log used as blockade.

- The Centre deviated from the established procedure of remitting the daily collection in the bank. Even when a single day's collection was as high as ₹9.55 lakh during the period, the bank did not send their staff to collect the cash. Since the cash could not be kept in the Centre due to safety reasons, the staff members were compelled to carry the cash home and bring it back on the next day.

The deviations noticed in other Centres are as follows:

- Scrap was dumped over UPS and battery posing a fire risk and the abandoned computers and other unused hardware were not disposed off in 2 out of 6 Centres visited by audit team as shown in picture below**.** In two Centres the air conditioners were not working properly.

Picture shows dumping of scrap over the UPS, battery and near the counters in Thiruvananthapuram and Malappuram Centres.

The Government stated (November 2014) that the scrap had since been disposed of from Centres in Thiruvananthapuram, Kollam, Pathanamthitta, Malappuram, Kannur and Kottayam and instructions had been issued to other Centres for disposal.

4.12 Business continuity and disaster recovery planning

Business continuity planning (BCP) is working out how to stay in business in the event of a disruption. Audit noticed that appropriate business continuity plan and disaster recovery planning have not been formulated.

4.12.1 Inadequate backup facilities

Backup refers to copying and archiving of computer data so that it may be used to restore the original after a disaster and also to restore files after they have been accidentally deleted or corrupted. Offsite storage of backup data would ensure resuming the business with minimum time lag in the event of a disaster like fire, flood, etc.

While appreciating the measures adopted for ensuring backup, Audit observed that the project had not ensured offsite storage of backup. Instead the backup was stored in the same location, where servers were placed. All the servers and tape cartridges were kept on the ground floor adding high risk to the data.

4.12.2 Flaws in the terms of annual maintenance contract (AMC)

Business Continuity Plan should also ensure that an entity's business operation is not interrupted owing to power failures and hardware failures. Entering into agreements with AMC providers would ensure minimum interruption to the business. However, Audit noticed several flaws in the terms of contract and lack of control over the AMC provider adversely affecting business continuity, as indicated below.

- No hardware downtime reports were obtained from AMC provider, though fortnightly report was stipulated in the terms of the contract.
- There was no clause relating to levy of penalty in the event of failure in providing timely services.
- Though the latest time to attend a fault call was stated to be 24 hours, no time limit was fixed for rectification other than a passive statement 'in the earliest possible time'.
- Though preventive maintenance was stipulated to be done once in three months, no registers were maintained to monitor the preventive maintenance.
- No preventive maintenance was reported to be done except in Malappuram Centre.
- Hardware status/fault registers were not maintained in three out of six Centres visited. In Thiruvananthapuram and Malappuram Centres they were maintained only up to April 2010. In Kozhikode Centre, the dates of rectifications were not entered.
- In Thiruvananthapuram Centre, in one of the cases, the delay in rectification was 18 days and in another the delay was 15 days during the period test checked (2008-2010). In 56 *per cent* of cases, the delay could not be ascertained as dates of rectifications were not entered.

4.13 Failures in realisation of a single window remittance system

Being a bill remitting centre, resident friendly measures would have ensured retention of customers and thus enabling the project to achieve its stated objective of becoming a single window integrated remittance centre. To enhance customer experience, the IT systems should have evolved to keep up with the technological advances in the external environment. But due to lack of vision and proper planning, this could not be achieved. Audit noticed following deficiencies in this regard:

- There was no provision for accepting payments from residents through credit and debit cards.
- There was no provision for accepting cheques from Government departments and autonomous bodies/corporations. Audit data analysis

revealed that there were 865 cash transactions that exceeded ₹1 lakh and that a single cash transaction was as high as ₹12.43 lakh.

- There were withdrawals of services like payment of land tax, building tax, luxury tax, lease rent and fees for services rendered by Revenue Department. Data analysis revealed 85.79 *per cent* of drop in bills relating to the Revenue Department.

Transactions of bills relating to KSEB (32.15 *per cent*) constituted one of the major business of the project. However, the number of transactions in respect of KSEB fell from 11.36 lakh to 6.7 lakh during the period from 2006-07 to 2013-14, even though direct connectivity to KSEB server was established in the FREES system from 2010 onwards.

The reasons, which contributed to the reduction, were as follows:

- KSEB did not permit FRIENDS Centres to accept power bills with fine after the pay-by-date for no meaningful reasons;
- FRIENDS Centres were not provided with provisional module to accept payments, when billing data was not uploaded in KSEB server;
- Network problems owing to high network traffic and unmanageable server hits were pointed out in paragraph 4.9.6. During a test check conducted in Ernakulam and Kozhikode Centres for the period from December 2013 to March 2014, Audit noticed KSEB server downtime recorded at these Centres ranged from 20 minutes to 10 hours per day as shown in **Table 4.5**.

Table 4.5: Details of KSEB server downtime in two Centres

Ernakulam				Kozhikode			
Date	**From**	**To**	**Duration (H:M)**	**Date**	**From**	**To**	**Duration (H:M)**
05/12/2013	2:05 PM	3:30 PM	1:25	20/01/2014	4:00 PM	7:00 PM	3:00
06/12/2013	9:30 AM	10:00 AM	0:30	30/01/2014	9:20 AM	9:45 AM	0:25
18/12/2013	10:50 AM	2:00 PM	3:10	03/02/2014	12:00 PM	7:00 PM	7:00
30/12/2013	12:40 PM	2:00 PM	1:20	04/02/2014	11:40 AM	7:00 PM	7:20
17/01/2014	1:00 PM	2:00 PM	1:00	04/03/2014	9:00 AM	9:45 AM	0:45
25/01/2014	11:00 AM	7:00 PM	8:00	05/03/2014	9:00 AM	9:30 AM	0:30
27/01/2014	9:00 AM	7:00 PM	10:00	19/03/2014	2:50 PM	7:00 PM	4:10
28/01/2014	9:00 AM	7:00 PM	10:00	21/03/2014	10:50 AM	7:00 PM	8:10

(Source: Analysis of data obtained from the respective FRIENDS Centres)

FRIENDS project was envisaged as a single window system, where the residents can pay all their utility bills at a single location. The system should be available at all times and there should not be any occasion, where the public has to return without paying their bills. However in the beneficiary survey conducted, 84 *per cent* of the public remarked that they had to return without remitting their bills. This happened due to the deficiencies mentioned above and thus the objective of providing single window payment system could not be achieved.

The Government stated (November 2014) that owing to network failures, especially relating to KSEB and Motor Vehicles Department, timely services could not be provided to residents. The issues regarding real time data fetching is also being taken up with KSEB. The reply is not tenable in audit, because many of the deficiencies mentioned above could have been rectified by timely intervention and coordination with the participating departments.

4.14 Non-realisation of objectives by participating departments

The participating departments envisaged faster receipt of their dues and reduction in cost of collection from this project. However, Audit noticed that these objectives of the participating departments were not achieved due to the following reasons:

- There was persistent delay in remitting the collected money to participating departments as detailed in paragraphs 4.9.3.1, 4.9.3.2 and 4.9.3.3.
- The MoU with the bank allowed for collection of money pertaining to Saturdays and Sundays only on Monday thus delaying the payments to participating agencies.
- The money embezzled has still not been paid to the participating agencies even after two years.
- In the absence of appropriate supervision and proper norms for work load, there was underutilisation of staff, who were deputed from the participating departments.

The absence of MIS reports due to improper system design made the monitoring of timely payments to participating departments extremely difficult. Thus due to lacunae in the system design and its implementation, the participating departments could not realise the full benefits of the FRIENDS/FREES project.

4.15 Conclusion

The main objective of the project was to facilitate residents to remit taxes and other utility payments through a single window system. But, poor system design and lack of proper integration with participating departments led to the failure in achieving this prime objective. The project suffered due to the absence of an IT Steering Committee, which is responsible for developing and maintaining vision and goal of the project, developing an operating charter for formalising the roles and responsibilities and providing guidance to help the system evolve with the changing environment. Current customer requirements, like provision for accepting payments through credit and debit cards were not incorporated into the newly developed FREES application. This has resulted in reduction in number of residents using this facility.

The system was incapable of generating adequate MIS reports for proper monitoring and assessing early warning signals. Unnecessary manual interventions were required in the process, which could have been easily avoided by appropriate system automation. Withdrawal of services and unsolved issues relating to KSEB

and other agencies indicate lack of timely managerial intervention and coordination with participating departments.

These deficiencies in the system have resulted in defeating the main objectives of

- facilitating the residents to pay their taxes and utility bills through a single window system and
- facilitating the participating departments to receive their dues effectively and efficiently.

This has also resulted in embezzlement of cash and delayed deposit of money in to the respective account due to poor system design and control failures.

4.16 Recommendations

- IT Mission should rectify the deficiencies and develop the system in tune with the changing environment like establishing required relationship among different data tables, enabling acceptance of debit and credit cards, etc.
- The State Government should ensure regular collection from FRIENDS Centres by the banks and modify the MoU so that money collected every day is remitted to the bank on the same day.
- All the issues pertaining to the participating departments should be resolved through proper coordination.
- Explore the option of adding new services and resumption of services already withdrawn so that FRIENDS becomes a single window system of remittance in true sense.
- Annual maintenance contract should be finalised incorporating penal provisions for delay in rectification.

COMPLIANCE AUDIT

CHAPTER V
COMPLIANCE AUDIT

AUDIT OF SELECTED TOPICS

HEALTH AND FAMILY WELFARE DEPARTMENT

5.1 Kerala Emergency Medical Services Project (108 Ambulance)

5.1.1 Introduction

Government of Kerala (GOK), Health and Family Welfare Department, launched (December 2008) the Kerala Emergency Medical Services Project (KEMP) in Thiruvananthapuram district in May 2010 and in Alappuzha district in April 2012 through Public Private Partnership mode (PPP) for the effective management of emergencies arising due to increasing road accidents, health related problems, outbreak of diseases and unexpected natural disasters. Expansion of the project to other districts had not materialised as of date (October 2014). While GOK provided 50 fully equipped ambulances and space for setting up the Emergency Response Centre (ERC), the private partner, selected through a bidding process was to operate the ambulances equipped with trained paramedical staff. The public were to be provided 24x7 access to the ambulance services free of cost, by using a common toll free telephone number '108'. As per the project, an ERC was set up (May 2010) at Thiruvananthapuram to receive the distress calls from the public and to send the ambulances to the pickup spot. The services of the ambulances were to be provided round the clock through an integrated solution including Voice Logger System, Geographic Information System maps, Global Positioning System (GPS), Automatic Vehicle Tracking and mobile communication system, etc. The designed system was to ensure that on receipt of a distress call, the control room could mobilise the nearest available ambulance to pick up the distressed persons and transport them to the nearest hospitals.

Management of the project, which was initially vested with the State Health and Family Welfare Society (SHFWS), was entrusted to the Kerala Medical Services Corporation Ltd. (KMSCL) with effect from January 2012. M/s. Ziqitza Health care Limited (ZHL) was the agency operating the scheme in the State during the period 19 May 2010 to 15 October 2013[76]. The current operator of the scheme is M/s. GVK-EMRI, Hyderabad (GVK-EMRI) since 16 October 2013[77].

[76] The contract envisaged payment of operational expenses of ₹2.97 crore per year for 25 ambulances for Thiruvananthapuram district and for Alappuzha district, operational expenses of ₹2.30 crore per year for 18 ambulances. In addition, additional operational cost payable for each ambulance was calculated at the average price of ZHL in running the ambulances for 2000 km for any additional km covered beyond 2000 km per ambulance per month

[77] Operational expenses of ₹1.17 lakh per month per ambulance for 43 ambulances. In addition, additional operational cost of ₹15 for any additional km travelled beyond 3000 km in a month

The Audit of the implementation of KEMP in the State with reference to the terms and conditions stipulated in the PPP agreement with ZHL/GVK-EMRI and provisions of the Kerala Financial Code (KFC) was conducted during April to July 2014 covering the period 2009-14.

5.1.2 Funding

Government of India (GOI) stipulated that while it would fully support the capital cost[78] for emergency response transport, the operational cost would be supported on a diminishing scale of 60 *per cent* in the first year, 40 *per cent* in the second year and 20 *per cent* from the third year onwards. The funds were released by GOI through the National Rural Health Mission (NRHM) on the basis of requirement projected by the State Government. Details of funds received and expenditure during 2008-2014 are given in **Table 5.1**:

Table 5.1: Details of funds received and expenditure

(₹ in crore)

Year	Amount sanctioned		Total	Expenditure
	GOI	GOK		
1	2	3	4 (2+3)	5
2008-09	11.48	-	11.48	5.00
2009-10	10.94	-	10.94	13.34
2010-11	7.40	0.90	8.30	4.68
2011-12	3.00	-	3.00	4.36
2012-13	6.64	40.00	46.64	6.85
2013-14	2.36	10.00	12.36	7.68
Total	**41.82**	**50.90**	**92.72**	**41.91**

(Source: Data furnished by NRHM/KMSCL)

Audit Findings

5.1.3 Service Delivery

The primary objective of KEMP was to provide 24x7 pre-hospital emergency medical response (ambulance) services all over the State, free of charge to the distressed persons. Details of audit observations on service delivery are given below:

5.1.3.1 Denial of calls i.e. not providing required ambulance services

The KEMP was aimed at providing 24x7 pre-hospital emergency medical response (ambulance) service all over the State free of any charge to the distressed persons. **Table 5.2** gives the details of calls made by the distressed persons and the required ambulance services provided or not.

[78] Capital cost *viz.* cost of ambulances and setting up of ERC

Table 5.2: Details of calls received and attended

Period	Total calls received at ERC	No. of calls attended (including inter-facility transfers at Col. 6)	No. of cancelled[79] calls	No. of denied[80] calls	No of Inter-facility transfers[81]	No. of unattended calls (including denied calls) Col. 2- (3+4)
1	2	3	4	5	6	7
Details of calls recorded by ZHL						
May 2010 to 15 October 2013	1675353	100027	15010	27370	45417	1560316
Details of calls recorded by GVK-EMRI						
16 October 2013 to March 2014	192155	16318	2617	732	4738	173220
Grand Total	**1867508**	**116345**	**17627**	**28102**	**50155**	**1733536**

(Source: Data furnished by KMSCL)

It can be seen from the above table that ambulance service was not provided in respect of 28102 calls during the period May 2010 to March 2014 due to non-availability of ambulances. GOK stated (October 2014) that the percentage of such calls was only 1.5 *per cent* of the total calls received. It was further stated that patients taken by the 108 ambulance to secondary or district health institutions were mostly referred to medical colleges which were far away from the parking locations of the ambulances. During such period, the services of such ambulances would not be available in that location for attending to emergency cases. It was also stated that in Alappuzha district, cases of denial of ambulance service occurred due to the fact that some of the cases were referred to hospitals and medical colleges situated in the neighbouring district e.g. Medical College, Kottayam.

The reply is not tenable as ambulances available at nearby places could have been deployed using the GPS and Automatic Vehicle Tracking and Mobile Communication System as provided under clause 3 of the agreements with ZHL and GVK-EMRI. It was further observed that no efforts were made to address the deficiency of ambulances, despite four ambulances remaining unutilised during April 2012 to October 2014 as stated in paragraph 5.1.3.2. GOK's contention that the number of denied calls was only 1.5 *per cent* of the total calls received cannot also be accepted since even a single call denied could put the life of patients at risk.

5.1.3.2 Idling of ALS ambulances

GOK ordered SHFWS (December 2008 and September 2009) to implement the KEMP in Thiruvananthapuram and Kannur districts. Director of Health Services (DHS) purchased 50 delivery vans which were converted to Advance Life Support (ALS) ambulances through M/s. Aeon Medicals (Aeon) at a cost of ₹16.90 crore. The ALS ambulances were received by DHS in March and April 2010. The project started functioning (May 2010) in Thiruvananthapuram district with 25 ambulances. Considering the density of population and the increase in accidents,

[79] Cancelled calls: Calls responded to by ambulances but persons not taken to hospitals due to fake calls, not critical cases, cases already taken by other vehicles to hospitals, Dead on Arrival (DOA) cases, etc.
[80] Denied calls: Calls not attended to because of non-availability of vehicles
[81] Inter-facility transfers: Transfer from one hospital to another due to inadequate facilities in the first hospital

GOK decided (May 2010) to allot the second set of 25 ambulances received in April 2010 to Alappuzha district in order to implement the scheme in Alappuzha instead of in Kannur district. However, these ambulances could be deployed in Alappuzha only from April 2012 due to delay in finalizing the tendering process. In the meantime, the 25 ambulances were deployed to various hospitals in the State in March 2011. Thus, these 25 ambulances were idling for one year from April 2010 when these were received to date of deployment to various hospitals *viz.* March 2011. As of October 2014, two ambulances were idling for 31 months (since April 2012) and two were idling for 13 months since October 2013 as detailed in **Table 5.3**:

Table 5.3: Details of idling ambulances

Details of idling ambulances	Idling period
Out of 50 ambulances purchased in March/April 2010, 25 were deployed only in March 2011	25 ambulances x 12 months from April 2010 to March 2011
Four out of 25 ambulances deployed in March 2011 were idling from April 2012. Two out of these four issued as back up ambulances in April 2014, remaining two ambulance idling till date (October 2014)	2 ambulances x 24 months from April 2012 to March 2014 2 ambulances x 31 months from April 2012 to October 2014
2 ambulances received in October 2013 in lieu of two out of the 50 purchased in March 2010 which got destroyed in a fire accident were idling from October 2013 till date (October 2014)	2 ambulances x 13 months from October 2013 to October 2014

Thus, non-deployment of ambulances in a timely manner lead to the idling of four ambulances for 13 to 31 months as of October 2014 and denial of services to the public. GOK replied (October 2014) that a proposal to operate the four ambulances on the highway in Kollam district is under consideration.

5.1.3.3 Response time of ambulances

As per project guidelines of GOK (January 2009) ambulance service (108) under KEMP should respond to calls and reach at the required spot within 10 minutes of alert. Audit test checked the response time of ambulances for five months[82]. It was noticed that on an average, 45.52 *per cent* calls were attended to within 10 minutes. However, the response time was beyond 10 minutes in 54.48 *per cent* of the cases. This included 23.08 *per cent* of calls which were attended to after 15 minutes. Failure to respond within stipulated time posed risks to the needy and is a cause for concern.

GOK stated (October 2014) that shortage of ambulances contributed to increase in response time. It was also stated that as per the experience from the pilot project, the average response time had been kept as 15 minutes for urban areas, 25 minutes for rural areas and 30 minutes for hilly and difficult terrains in the latest tender. The

[82] June 2013, October 2013 to January 2014

reply fails to explain why GOK did not utilise the four ambulances which were idling during the period as mentioned in paragraph 5.1.3.2 above which could have improved the response time.

5.1.3.4 Implementation of KEMP in other districts in the State

The DHS submitted (June 2012) a proposal to GOK for extending the project to all districts at a total cost of ₹45.15 crore by purchasing 287 ambulances. GOK accorded (October 2012[83]) administrative sanction to the proposal for ₹40 crore and the amount was released to NRHM in October 2012. As DHS again submitted a proposal (July 2013) for release of ₹10 crore for extending the project to Pathanamthitta and Wayanad districts, GOK released ₹10 crore to DHS in September 2013. These amounts were transferred to KMSCL (₹40 crore in March 2013 and ₹10 crore in January 2014) and are still remaining unspent (October 2014).

The sanction for procurement of 287 ambulances was granted by GOK only in February 2014. GOK decided (February 2014) to invite tenders for supply of vehicles, fabrication and installation of equipment and also for the selection of operating agency for the project. KMSCL invited (February 2014) tenders for selecting operators for implementing the project in all districts of the State. The tender was later cancelled (June 2014) by GOK citing non-finalization of pre-qualification criteria and ordered retender with specific pre-qualification criteria after obtaining the views of Tender Finalization Committee.

Thus, even after two years of envisaging the expansion plans and despite availability of funds since March 2013, the project was not extended to the other districts in the State. This resulted in blocking of ₹40 crore for over a year and ₹10 crore since January 2014 with KMSCL besides depriving the general public of the intended benefits.

5.1.4 Contract Management

5.1.4.1 Procurement and equipping of ambulances into Advanced Life Support ambulances

Article 51(v) of KFC stipulated that the terms of a contract once entered into should not be materially varied without the previous consent of the Government or the authority competent to enter into the contract as so varied. Article 51 (ix) also stipulated that the Government servant who enters into a contract on behalf of Government and also his subordinates are responsible for strictly enforcing the terms of the contract and for ensuring that no act is done that would tend to nullify or vitiate the contract.

GOK conveyed sanction (September 2009) to the DHS for procurement of 25 ambulances each, for Thiruvananthapuram and Kannur districts at Directorate General of Supplies and Disposals (DGS&D) rates. These ambulances were to be equipped by KMSCL for conversion to ALS ambulances following due tender

[83] ₹40 crore vide GO (Rt) 3291/12/H&FWD dated 05.10.12

process. Supply orders were placed with M/s. Force Motors Ltd. for supply of 50 Force Traveller ambulances costing ₹6.55 lakh each at DGS&D rate. For fabricating and equipping these ambulances as ALS ambulances, Aeon was selected (September 2009) after following a competitive tender process.

After entering into the contract for equipping Force Traveller ambulances at a cost of ₹13.15 crore, Aeon informed KMSCL (October 2009) that these ambulances could not be equipped and converted into ALS ambulances. It recommended procurement of Force delivery vans instead of Force ambulances for conversion into ALS ambulances citing various reasons[84]. Aeon also informed that there should be no change in their prices and that the same prices payable to it for conversion of ambulances should be paid for converting delivery vans into ALS ambulances. In a Purchase Committee meeting (October 2009), chaired by the State Mission Director (SMD), NRHM, the proposal to procure Force delivery vans was accepted. The meeting also authorised the State Health Transport Officer, Directorate of Health Services (SHTO, DHS) to negotiate with M/s. Force Motors Ltd., and finalise the rate for procurement of 50 delivery vans. Based on the letter received from Managing Director, KMSCL and SMD, NRHM, GOK approved (October 2009) cancellation of the earlier purchase order for supply of Force ambulances issued by the DHS and accorded sanction (November 2009) for purchase of 50 Force delivery vans for ₹2.81 crore at special Government rate without tendering. These delivery vans were converted and equipped as ALS ambulances by Aeon at a cost of ₹13.15 crore. DHS received these ALS ambulances in March-April 2010.

The procedure followed for procurement of 50 Force delivery vans without following due tender process and entrusting the SHTO, DHS to negotiate and finalise the rate lacked transparency and financial probity. Post bid revision of the scope of work on the advice of the private firm and awarding the work to them without calling for fresh competitive tender for the new work resulted in extending undue favour to Aeon. GOK should have reverted to retendering for giving equal opportunity to all potential bidders.

GOK stated (October 2014) that during the period when the tender was called (2009), M/s. Force Motors had not introduced base ambulance vehicles which could be converted into ALS ambulance. Hence, the only available option was converting delivery vans into ALS ambulances. This reply is not borne out by facts since M/s. Force Motors had submitted (July 2009) a proforma invoice for supply of Force Traveller ambulance at DGS&D rate, which was accepted by the DHS and supply order placed for 50 ambulances.

Action of the GOK was not in conformity with the provisions of the KFC, which calls for investigation followed by fixing of responsibility of persons at fault for violation of provisions of rules.

[84] Inability to mount life saving medical devices on the side wall of ambulances due to the presence of three windows on each side, ability to ensure sterility and hygiene only in a closed delivery van rather than in an ambulance which has six windows in all, easy patient trolley loading in delivery vans manufactured by Force Motors due to a 270° rear door opening and the electrical system in these delivery vans being superior to normal ambulances

5.1.4.2 Operational safety of ambulances

Section 52 of the Motor Vehicles (MV) Act 1988 prohibited structural alteration of vehicles for registration purposes. As the State was operating ambulance services by converting delivery vans used for transporting purposes into ALS ambulances, the Transport Commissioner (TC) granted only provisional registration instead of permanent registration to these vehicles on the ground that alteration of a goods vehicle to a passenger vehicle was in violation of Section 52 of MV Act 1988 and Rule 126 of Central Motor Vehicles Rules 1989. GOI instructed (August 2010) the State to get the altered vehicles examined for safety, with reference to the homologation[85] certificate issued by M/s. Automotive Research Association of India[86], Pune (ARAI) for ambulances, for granting exemption from the provisions of Section 52 of the MV Act 1988. The agreement executed with Aeon for conversion of vehicle also did not have a Clause on obtaining safety certificate from the authorities. TC stated (July 2014) that despite repeated instructions, DHS failed to produce these ambulances for inspection. Exemption from Section 52 of the MV Act 1988 was also not obtained and these ALS ambulances continue to run without being certified for safety (July 2014).

The fabricating and equipping of Force delivery vans at a cost of ₹13.15 crore foregoing the safety aspects resulted in one ALS ambulance destroyed in a fire accident (October 2011) reportedly due to an electrical short circuit resulting in the death of two people (grandparents accompanying a child patient) who were trapped in the burning ambulance.

The GOK needs to fix responsibility of officials at fault for violations as indicated above.

5.1.4.3 Undue favour to the operating agency

The Request for Proposal (RFP) notification issued by the SHFWS (January 2009) to implement the project in Thiruvananthapuram district indicated the duration of the project as three years. Four agencies expressed interest in the project and the lowest bid submitted by ZHL was accepted. The SMD executed (October 2009) an agreement with ZHL for operating 25 ambulances in Thiruvananthapuram district for three years (16.10.2009 to 15.10.2012) at an operational cost[87] of ₹2.97 crore per year. Even though the agreement was entered into on 16.10.2009, the project was launched in the district only on 19th May 2010.The agreement was later extended up to 15.10.2013.

[85] Type Approval/Homologation certification is granted to a product that meets minimum set of regulatory technical & safety requirements as notified by the respective Government. The certification is a must, before a new/modified product is launched commercially. Type approval/Homologation is a customised service and the terms and conditions vary from country to country

[86] A co-operative industrial research association established by the automotive industry with the Ministry of Industries, Government of India

[87] Operation cost as per the agreement includes salary of call centre staff and ambulance staff for 24 hours, maintenance cost of ambulance, ambulance operation cost including fuel, recruitment, training and administration, cost of consumables up to 10 persons/ambulance/day, maintenance and operation of call centre including telephone power and water charges

Audit examined the price bids furnished by all the three shortlisted firms. It was noticed that unlike the other two firms which had quoted annual increase in operational expenses, the rate quoted by ZHL was for only one year and did not contain any condition for yearly increase in operational expense for the subsequent two years. As ZHL had not quoted any condition for yearly increase of operational cost in their price bid, the single rate quoted by the firm for the first year of operation (19 May 2010 to 18 May 2011) was applicable for the subsequent years also, without allowing any yearly increase, as per the terms of the tender. However, the SHFWS, represented by the State Mission Director, NRHM incorporated a condition[88]in the agreement indicating that yearly operational expenses (after one year of operation) would be increased on the basis of Consumer Price Index (CPI) and prevailing average increase in similar contracts in other States, which was contrary to the tender conditions. Thus the insertion of the said condition relating to yearly increase was unjustified.

Audit further observed that the GOK appointed (October 2011) the same agency ZHL, as the operating agency for KEMP in Alappuzha district also, on the same payment terms as applicable for Thiruvananthapuram and the agency performed its activities in Alappuzha district from 21 April 2012 to 15 October 2013.

Audit observed that incorporating the clause permitting yearly increase in rate which was not justified resulted in undue benefit to the firm and corresponding loss to state exchequer of ₹78.03 lakh.

GOK stated (October 2014) that modified draft agreement was not submitted to it for approval. Thus, incorporating a condition in the agreement favourable to the agency to increase the rate yearly, which had not been quoted by the firm in their financial bid, not only vitiated the tender process but also amounted to undue favour of payment to the tune of ₹78.03 lakh which calls for investigation followed by fixing of responsibility for such an irregular action.

5.1.4.4 Payments made for additional kilometres run

As per the price bid furnished by ZHL in response to RFP issued in January 2009, recurring expenses (including fuel and maintenance charges for 2000 kilometres per ambulance per month) for all 25 ambulances for one year was ₹2.97 crore. The financial bid submitted by the firm did not stipulate rate for additional kilometres over 2000 kilometres. However, agreement entered into between ZHL and SHFWS (October 2009) incorporated a provision for payment of additional operational costs for any additional kilometre covered above 2000 kilometres per ambulance per month. It provided for payment of additional operational costs for additional kilometres covered above 2000 kilometres to be calculated at the average price of ZHL in running the ambulances for 2000 kilometres. Implementation of the project in Alappuzha district (April 2012 up to 15 October 2013) was also awarded to the same agency reckoning an annual recurring expenditure of ₹2.30 crore with 18 ambulances on the same payment terms and conditions. Payment of ₹7.50 crore was made to ZHL by SHFWS as on 15 October 2013 towards additional costs for

[88] Clause 9 of agreement

operating the ambulances in Thiruvananthapuram and Alappuzha during August 2010 to 15 October 2013, when the contract with ZHL concluded.

Scrutiny of records relating to payments made to ZHL revealed that the agency was paid additional operational costs for each kilometre at the rate of ₹49[89] for the period 2010-11[90] and at the rate of ₹53[91] for the period 2011-2013[92]. Audit noticed that instead of reckoning the additional operational costs payable to ZHL on the basis of average cost in running the ambulances, the additional rate was arrived at by taking into account the average monthly operational cost which included the salary to call centre and ambulance staff, maintenance and operational costs of call centre including power, telephone and water charges, etc.

As the average cost of ZHL in running the ambulances was not available on record, Audit made a comparison of the additional operational cost paid to ZHL during 2010-13 (₹49 and ₹53 per additional kilometre) and payment allowed to GVK-EMRI, the operators of the project from October 2013 (₹15 per additional kilometre for distance covered above 3000 kilometre). It was seen that while the base rate per kilometre per ambulance for ZHL was ₹49 from August 2010 to 18 May 2011 and ₹53 from 19 May 2011 to October 2013, it was ₹39 in the case of GVK-EMRI from October 2013. GVK-EMRI had claimed only ₹15 per additional kilometre. Allowing a much higher rate (₹49 and ₹53) for an additional kilometre resulted in undue payment of ₹5.35crore[93] till 15 October 2013 to the ZHL.

While giving reply, GOK admitted (October 2014) that the salary of staff remains the same for a month, but other expenses like consumables (Medicines and Oxygen), maintenance of the vehicle, etc. had to be borne by the firm. It also stated that there were no previous records to refer and based on experience gained in running the scheme, the rate for extra kilometre was later kept at ₹15 per kilometre.

Thus, as the agreement condition provided for payments of running expenses of ambulances only for beyond 2000 kilometres, the payment of additional operational cost for beyond 2000 kilometres at ₹49 and ₹53, which included elements of salary and other administrative expenses also resulted in avoidable payment of ₹5.35 crore which calls for fixing of responsibility for failure to apply the right method of calculation leading to undue favour to the agency.

5.1.4.5 Non-imposition of penalty

Implementation of KEMP in the State with effect from 16 October 2013 was awarded to GVK-EMRI, Hyderabad at an agreed operational cost of ₹1.17 lakh per

[89] For Thiruvananthapuram upto 18/5/2011. 1st year's operational cost (₹296.70 lakh) / 12 months X 25 ambulances X 2000 km = ₹49.45

[90] August 2010 to 18 May 2011

[91] For Thiruvananthapuram from 1/6/2011 to 15/10/2013 & Alappuzha from 1/4/2012 to 15/10/2013
2nd year's operational cost for Thiruvananthapuram (₹319.12 lakh) / 12 months X 25 ambulances X 2000 km = ₹53.18
1st year's operational cost for Alappuzha (₹229.77 lakh) / 12 months X 18 ambulances X 2000 km = ₹53.18

[92] 19 May 2011 to 15 October 2013

[93] Calculated at the current rate of additional cost agreed upon by M/s. GVK-EMRI for implementing the project from 16 October 2013 onwards

ambulance per month. The KMSCL paid (in April/May 2014) ₹3.02 crore[94] to the agency towards the operating cost pertaining to the period 16 October 2013 to 15 April 2014.

As per the terms of agreement executed between KMSCL and GVK-EMRI, only five *per cent* of the fleet could be off road[95], failing which KMSCL was to deduct penalty of an amount equal to double the operating expense applicable at the time of the contract for the non-performing ambulances for that period[96]. Test check of the Management Information System (MIS) data for the month of December 2013 revealed that 21 *per cent* (nine numbers) of the 43 ambulances (25 in Thiruvananthapuram and 18 in Alappuzha districts) were off road as against the permissible five *per cent* (two numbers). Cases of ambulances being off road for a few days during other months were not reckoned. Thus, KMSCL failed to recover at least ₹16.38 lakh as penalty from the agency resulting in undue benefit to the agency.

GOK stated (October 2014) that the initial contract with GVK-EMRI was for a period of six months from 16 October 2013. Since the extension of agreement beyond six months was delayed, GOK decided to extend the period of operation of GVK-EMRI for a further period of three months. GOK stated that all pending payments were released to GVK-EMRI since the agency insisted on clearance of their dues before commencement of services. The reply is unacceptable as GOK needed to only pay what was due as per the terms of the agreement. Payment for ambulances that were off-road beyond permissible limits was irregular.

5.1.4.6 Non-adherence to other contractual provisions

Contractual provisions regarding setting up of voice logger system, setting up and maintenance of emergency response system and manpower required, were complied with by ZHL. Records produced to audit indicated that ZHL provided stipulated training programme to doctors, paramedical staff, etc. However, conditions requiring ZHL to maintain separate financial records of its operation in Kerala to be audited by a Chartered Accountant as approved by SHFWS and furnished to SHFWS by the end of the 1st quarter of succeeding year was not complied with.

GOK replied (October 2014) that in the tender model, there is no relevance for auditing the funds of the agency.

The reply is not acceptable as this resulted not only in non-compliance with the terms of agreement but also led to many such other implications as stated in preceding paragraphs.

[94] ₹117000 x 43 Nos x 6 Months
[95] Clause XXIV
[96] Clause XIV (ii)

5.1.5 Monitoring

5.1.5.1 IT based monitoring

The SMD, NRHM decided to implement an IT based solution for monitoring the extra kilometre run by the ambulances. However, as of March 2014, the IT based solution was not developed. As such, there was no effective mechanism in place in the Department to ensure accuracy in the agency's claim on distance covered while making payments.

GOK replied (October 2014) that for implementing this, new software and hardware have to be incorporated in the present system for which no funds were allotted. It was also stated that this has been included as a clause in the new tender to have an Automated IT based solution to find out the distance covered and penalty calculation by the system.

5.1.5.2 State level/District level committee meetings

Agreements executed between ZHL and SHFWS/KMSCL stipulated that the SHFWS was responsible for convening and holding meetings of the state level committee once in three months under the patronage of Health Minister, to monitor the operations of the KEMP. It was the responsibility of the District Health and Family Welfare Society to convene district level meetings with the District Collector as Chairman.

Audit noticed that the state level committee, though constituted in September 2009 had not met even once. While the district level committee in Thiruvananthapuram district met only once during October 2009 - March 2014, the district level committee in Alappuzha met only four times during April 2012 - March 2014.

GOK stated (October 2014) that since the project was not extended to the entire State, meeting of the state level committee was not conducted. It was also stated that reasonable number of district level meetings were conducted at Alappuzha and interaction on regular basis on the problems associated with the operation of KEMP in Thiruvananthapuram district were conducted among District Medical Officer (Health), District Programme Manager, KMSCL and NRHM. This contention is not correct in view of the fact that the primary objective behind holding meetings of the state level committee was to monitor the commissioning and operations of KEMP in the State. Delay in expanding the project to the other districts in the State could be attributed to failure to convene the state level committee meetings. The intention about constitution of district level committee was to ensure periodical collective evaluation of the implementation of the project in the district and not individual interaction in solving day to day affairs.

5.1.6 Conclusion

The project was launched with the commendable objective of providing emergency ambulance services to the needy, free of cost. Agencies, entrusted with delivering 24x7 services however failed to attend to 28102 calls due to non-availability of

vehicles. In 54.48 *per cent* of cases test checked, response time of ambulances was much beyond the stipulated 10 minutes.

The project was implemented only in Thiruvananthapuram and Alappuzha districts. Laxity of the department resulted in the project not being extended to other districts, despite availability of funds. KMSCL allowed much higher rate for additional kilometres run beyond 2000 kilometres. Instances of flouting tender procedures in the procurement of delivery vans and fabrication of the same into ambulances were noticed. Violation of contractual provisions resulting in undue benefits to the agencies was also noticed. The delivery vehicles were converted as ambulances without reckoning the safety aspects of ambulances *vis-a-vis* delivery vans. The State level committee to monitor implementation of the project in the State did not meet even once.

HOUSING DEPARTMENT

5.2 Role of Kerala State Nirmithi Kendra in Civil Construction Works

The Kerala State Nirmithi Kendra (KESNIK) was set up in 1989 under the Travancore Cochin Literary, Scientific and Charitable Societies Act 1955 as an Apex body to co-ordinate, monitor and regulate the activities of the various Nirmithi Kendras[97] in the State. The Memorandum of Association of KESNIK (MoA) as approved (April 1989) by Government of Kerala (GOK)/Detailed Project Report (DPR) inter alia envisaged the following objectives stating that KESNIK would:

- act as a seminal agency, to generate innovative ideas in the building construction sector,
- undertake Research and Development (R&D) activities and interact with agencies to ensure field level application of research in housing sector,
- set up production centres, to prefabricate standardised building materials, propagate Cost Effective Environment Friendly and Energy Efficient (CEEF)[98] technologies in building construction,
- set up fair price shops (Kalavaras) to address the spiralling cost of building materials and
- conduct R&D, orientation training programmes and finishing schools through the training centre 'Laurie Baker International School of Habitat Studies' (LaBISHaS).

An audit was conducted during December 2013 to March 2014 covering the period 2009-14 through test check of records to assess whether the activities of KESNIK

[97] Nirmithi Kendras were intended to provide an institutional framework to meet the challenges in the housing sector. India's first 'Nirmithi Kendra' was set up in Kollam district of Kerala in 1985 to provide cost effective and environment friendly (CEEF) building technology and affordable solutions to housing

[98] CEEF technology involves use of locally available and innovative material, cutting down consumption of energy intensive materials (cement, steel), ensuring local participation in construction activities, blending new styles with traditional ones and designing according to the lay of the land

complied with the terms and conditions of the MoA and the guidelines/ instructions issued by GOK. The records of the corporate office of KESNIK at Thiruvananthapuram and the Regional Nirmithi Kendras (RNKs) in four[99] districts were examined. These units were selected on the basis of judgement sampling.

Audit findings are discussed in the following paragraphs:

5.2.1 Receipt of Grants-in-aid and their utilization

GOK annually released grants-in-aid to KESNIK for various schemes/activities. Analysis of the utilisation of grants-in-aid received during 2009-14[100] revealed that against the release of grants of ₹17.10 crore, expenditure incurred was ₹14.28 crore (83.5 *per cent*). There was an accumulated unspent balance of ₹5.93 crore with KESNIK (May 2014) including ₹1.51 crore for Kalavara scheme as explained in paragraph 5.2.5, ₹2.26 crore for R&D activities as stated in paragraph 5.2.6, ₹0.21 crore received from GOI/GOK/HUDCO[101], etc. prior to March 2006.

While admitting (November 2014) the facts, GOK stated that the unspent balance as of 2014 is being utilised, and presently the balance has come down significantly.

5.2.2 Works undertaken using CEEF technology

As per MoA, KESNIK would undertake all civil and related works in addition to construction of buildings especially public buildings utilizing Cost Effective Environment Friendly and Energy Efficient (CEEF) technology involving District and Regional level Kendras. The estimated project cost of each work to be undertaken under CEEF technology was to be based on a separate Schedule of Rates (SoR) to be published periodically by KESNIK. Preparation and publication of a separate SoR for construction using CEEF technology was essential due to substantial cost advantage (about 30 *per cent*) as compared to that used in conventional building techniques which was based on Public Works Department (PWD) SoR. Government had, therefore, confirmed (September 2007) that Nirmithi Kendras should not follow PWD SoR for their works.

KESNIK had not prepared separate SoR for constructions using CEEF technology. During 2009-14, KESNIK had undertaken 1155 construction works through 14 RNKs in the State. Audit noticed that out of the 598 works undertaken in the four test checked districts during 2009-14, 146 works could have been executed incorporating CEEF technology. However, it was noticed that only 3 works were executed incorporating CEEF technology. It was further noticed that out of 77 works undertaken by RNK, Thrissur during 2012-13, 62 were road works (80 *per cent*) where no application of CEEF technology was involved.

The overall savings in the use of CEEF technology, over conventional building technology estimated at 30 *per cent* was thus foregone due to non-adoption of CEEF technology by KESNIK. KESNIK did not work out the savings in any of the cases, despite being requested by Audit. Since, in a construction work, all items of

[99] Idukki, Palakkad, Thiruvananthapuram and Thrissur districts
[100] The finalization of annual accounts has been completed only up to the financial year 2011-12
[101] Housing and Urban Development Corporation Ltd.

works are not executed using CEEF technology, the items of work that can be done using CEEF technology need to be segregated and savings worked out. As KESNIK does not have any such details, Audit could not calculate the savings.

GOK stated (November 2014) that, the works undertaken by KESNIK were mostly public/departmental works. The consent of administrative authority awarding the work is required for construction with CEEF Technology. However, most of the authorities are reluctant to accept the CEEF technology because the Annual Maintenance Contract (AMC) of the building constructed using CEEF technology will also come under PWD and PWD does not entertain alternative technologies.

The Government reply is misleading in view of the fact that the KESNIK could have undertaken maintenance of buildings constructed by it using CEEF technology, as KESNIK has been established by the Government of Kerala with the basic objective of using CEEF technology in building construction.

5.2.3 Co-ordination of activities of KESNIK and District Nirmithi Kendras (DNKs) set up at district level

The MoA and directions of GOK required KESNIK to co-ordinate, monitor and regulate the activities of the District Nirmithi Kendras (DNKs) which function independently, with different bye laws. However, it was noticed that KESNIK did not exercise any control over the activities of the DNKs, resulting in different DNKs functioning independently without a common set of standards and specification.

KESNIK admitted its inability to exercise any control/coordination over the functioning of the DNKs and stated that no corresponding provision was incorporated in the bye laws of DNKs which were independent entities under the respective District Collectors.

Thus, the objective of KESNIK to function as a controlling body of the various DNKs in order to achieve synergy in the functioning of various Nirmithi Kendras, was not achieved. Thus, all such DNKs need to be brought under the umbrella of KESNIK for proper co-ordination, spread and use of CEEF technology throughout the State.

5.2.4 Introduction of innovative/new building products

As per MoA, KESNIK was to set up production centres to prefabricate standardised housing materials, to formulate strategies and to implement schemes for the supply of good quality, cost effective, energy efficient, eco-friendly, environment friendly and disaster resistant building materials. It was envisaged that the consumption of costly materials like, cement, steel, etc. could be minimised, by adopting innovative building practices.

KESNIK had set up 10 production centres with financial assistance received through Plan grant for ‘Setting up Production Centres’. However, verification of records of three selected production centres revealed that the centres at Muttom (Idukki district) and Chittoor (Palakkad district) produced only hollow/solid cement blocks during the period 2009-14. The production centre at Kodumbu

(Palakkad district) also focused on producing hollow/solid concrete blocks besides producing negligible quantities of other items like paving blocks, window/door frames, fencing posts, pit covers, jally, etc. during 2009-14. Thus, production of CEEF building materials was mainly confined to Hollow and Solid concrete Blocks alone.

KESNIK acknowledged (December 2013) that it was not focusing on developing new cost effective building materials due to lack of research activities. GOK stated (November 2014) that production centres were generally meant for manufacturing a commodity in large quantity and that niche products were not viable to be produced in mass production. It stated that products like Hollow concrete blocks, compressed stabilised earth blocks, solid concrete blocks, pavement tiles, etc. which were in great demand, were being produced at these centres and that other items which had less demand, were cast in-situ in small construction projects.

Thus, KESNIK failed in attaining its objective of supplying cost effective, energy efficient, eco-friendly, environment friendly and disaster resistant building materials through these production centres.

5.2.5 Functioning of Fair Price Shops - Kalavaras

KESNIK was to set up Fair Price Shops (Kalavaras) with the help of grants received from GOK for sale of building materials, to contain their escalating cost. Guidelines for the sale of building materials (except sand) to APL/BPL households through Kalavaras were issued by GOK in September 2009. The year-wise release of grants by GOK under the Kalavara scheme and their utilization during 2009-14 is given in **Table 5.4**:

Table 5.4: Year-wise release of grants under the Kalavara scheme and its utilization

(₹in lakh)

Sl. No.	Year	Opening Balance	Grant obtained	Total funds available	Expenditure	Percentage spent	Unutilised grant
1	2009-10	NIL	150.00	150.00	70.21	46.81	79.79
2	2010-11	79.79	61.87	141.66	69.48	49.04	72.18
3	2011-12	72.18	57.19	129.37	57.44	44.39	71.93
4	2012-13	71.93	320.00	391.93	133.34	34.02	258.59
5	2013-14	258.59	NIL	258.59	107.44	41.55	151.15

(Source: Details provided by KESNIK)

It was envisaged to supply steel and cement at discounted[102] prices to BPL households constructing houses with plinth area up to 600 sq.ft. Other beneficiaries constructing houses with plinth area upto 2000 sq.ft. were to be supplied these materials at procurement cost along with 10 *per cent* service charge or market price whichever was lower. With effect from February 2011 onwards, Government restricted the scheme only to BPL families for construction of houses up to 600

[102] Steel per kg. – Procurement cost less discount of two *per cent* (Minimum of Rupee One); Cement per bag – Procurement cost less ₹5

sq.ft. by offering subsidy up to 15 *per cent* of procurement cost (limited to 50 bags of cement and 500 kg of steel).

Though KESNIK had set up nine Kalavaras[103] (March 2014) to supply quality building materials at reasonable rates, it could not spend even 50 *per cent* of the available funds in any of the years.

During the period 2009-14, the number of beneficiaries who purchased building materials from Kalavaras was only 2,624. It was noticed that targets in terms of number of beneficiaries procuring steel and cement was fixed only from 2012-13 onwards. However, against the target of 3000 and 4800 BPL families during 2012-13 and 2013-14 for the State, achievement was only 761 (25.36 *per cent*) and 1141 (23.77 *per cent*). In the four test checked districts, only 37 and 578 BPL beneficiaries procured building materials from three Kalavaras during 2012-13 and 2013-14 respectively. Analysis of unutilised grant received from GOK during 2012-13 revealed that KESNIK had obtained ₹224 lakh for the subsidised sale of building materials and ₹36 lakh for meeting administrative expenses through 14 Kalavaras, including 7 Kalavaras operated by DNKs. However, KESNIK did not release ₹130 lakh due to the DNKs which resulted in under-utilization of the amount. The expenditure incurred towards subsidy assistance was only ₹64.86 lakh resulting in ₹159.14 lakh (71 *per cent*) remaining unspent during the year.

While admitting the underutilization of grants towards subsidy assistance, KESNIK stated that supply of building materials through Kalavaras was only to the specified beneficiaries and most of the Government housing schemes were executed through outside agencies. It was also stated that houses under housing schemes like the ST Housing scheme were located in remote areas and the transportation charges of materials from Kalavaras to these localities might not be economical to these beneficiaries. Government stated (November 2014) that if the issue of transportation cost is addressed, more beneficiaries would come forward to take benefit of the scheme. The reply fails to state as to why KESNIK despite obtaining grants from GOK did not release the same to DNKs resulting in lesser beneficiaries obtaining benefits of the scheme besides funds remaining unutilised.

5.2.6 Research and Development activities under LaBISHaS

GOK converted (June 2007) the then existing training centre of KESNIK as Laurie Baker Nirmithi Training and Research Institute (LBNTRI). Subsequently, LBNTRI was renamed (September 2009) as Laurie Baker International School of Habitat Studies (LaBISHaS). The activities earmarked under LaBISHaS were: (1) Finishing School[104] (2) Orientation training[105] and (3) Research and

[103] District-wise location of Kalavaras – Adoor, Chitoor, Ernakulam, Kalluvathukal, Karode, Kozhikode, Palai, Palakkad and Thiruvananthapuram

[104] A finishing school programme focuses on teaching skills and technical norms as a preparation for entry into a particular scheme of work. In the context of KESNIK, it is a programme that is intended to equip the students and trainees who have just completed an academic course to familiarise with various practical aspects of construction field

[105] Training programme intended to provide detailed knowledge regarding a particular area to workers who are already skilled in the construction sector, either to update their knowledge or to make their job easier in that area is called orientation programme

Development. It was noticed that LaBishaS could utilise only ₹2.11 crore of the ₹4.37 crore received from the State Government for its activities during 2009-14. Expenditure over the years has been showing a declining trend with only ₹ two lakh being spent during 2013-14.

It was noticed that despite availability of funds, five activities involving ₹1.08 crore were not undertaken at all during 2012-14 as given in **Table 5.5** below:

Table 5.5: Activities not undertaken

Sl. No.	Name of the Scheme	Amount (₹ in lakhs)
1.	Campus development of LaBISHaS	45
2.	Research programme	10
3.	Skill improvement training	10
4.	Training for Engineers for sustainable construction	3
5.	Skill upgradation training	40
Total		**108**

Even though, one of the main objectives of KESNIK was to undertake Research and Development activities in housing and allied fields, it admitted (October 2014) that no R&D activities were being undertaken by LaBISHaS primarily due to the non-availability of the minimum number of faculty with prescribed qualifications. The fact was also confirmed by GOK (November 2014). Thus, there is need of initiating research activities by appointment of adequate number of staff with prescribed qualification.

5.2.7 Activities to promote self-employment schemes

One of the objectives set forth in the MoA required KESNIK to dovetail the self-employment schemes of Government, Public Sector Undertakings and Commercial Banks with the housing needs of the State, in order to encourage youth to undertake income generating activities related to housing. It was noticed that KESNIK had not taken any action in that regard. KESNIK admitted that no steps were taken to achieve the objective of formulating projects which needed specialised knowledge and expertise to be implemented by the Kendra directly or through the DNKs. Thus, the aim for formulating projects to encourage youth to undertake income generating activities was not achieved.

5.2.8 Conclusion

KESNIK had not prepared separate SoR for construction works using CEEF technology. The works undertaken by KESNIK involving CEEF technology was negligible. It did not exercise control over the activities of the DNKs. It did not focus on developing new cost effective, environment friendly and disaster resistant building materials due to lack of research activities. The scheme to provide building materials at discounted rates to the BPL families failed to attract sufficient number of beneficiaries. LaBISHaS, the R&D wing of the KESNIK did not undertake

Research and Development activities due to failure to have the minimum number of faculty with prescribed qualifications.

5.2.9 Recommendations

- KESNIK should prepare separate SoR for CEEF technology and keep it updated;
- Necessary steps may be taken to ensure that DNKs operate under the umbrella of KESNIK; and
- Adequate faculty with prescribed qualification should be appointed in LaBISHaS to increase its effectiveness and for undertaking R&D activities.

LABOUR AND SKILLS DEPARTMENT

5.3 Health Insurance schemes implemented through Labour and Skills Department

5.3.1 Introduction

The Rashtriya Swasthya Bima Yojana (RSBY) and Comprehensive Health Insurance Scheme (CHIS) are two insurance schemes implemented in the State through the Labour and Skills Department. The RSBY was launched in 2008 by Ministry of Labour and Employment, Government of India to provide health insurance coverage for Below Poverty Line (BPL) families[106] and to protect them from financial liabilities that involve hospitalization. Households (Beneficiaries) under RSBY were entitled to hospitalization coverage up to ₹30,000 in select empanelled government and private hospitals, for most of the diseases that require hospitalization. The Scheme extends coverage to five members of the family which includes the head of household, spouse and up to three dependents. A Memorandum of Understanding (MoU) signed (September 2008) between Government of India (GOI) and Government of Kerala (GOK) identified 12,66,407 BPL families[107] in the state as eligible for obtaining medical insurance coverage under RSBY. The GOK formulated CHIS (2008) to provide similar health insurance coverage to additional 10 lakh families identified by the State as BPL (Poor)[108] and Above Poverty Line (APL) families.

Though CHIS was formulated in 2008, it became operational only from 2010-11 onwards. GOK extended (November 2010) the coverage of beneficiaries under CHIS by including all families with monthly income below ₹600 and all SC/ST/Fishing communities, members of welfare fund boards, families with disabled children, street vendors, etc., irrespective of their income.

[106] BPL list was prepared on the basis of score based ranking of rural households for which 13 socio economic parameters representing various deprivations faced by the poor were used

[107] Estimated as 11.79 lakh in GO (P) 95/2008/LBR dated 04.07.2008

[108] BPL (Poor) – List prepared by the State Government which excludes those in the list prepared by the Planning Commission

Both schemes were implemented jointly by the Labour and Skills Department (Labour), Health & Family Welfare Department (Health), Rural Development Department (RDD) and Local Self Government Department (LSGD).The Labour Department was designated (July 2008) as the nodal department for the administration of RSBY and CHIS in the State. A Society, 'Comprehensive Health Insurance Agency of Kerala (CHIAK)', registered (September 2008) under the Travancore Cochin, Literary, Scientific and Charitable Societies Act 1955 to perform as the State Nodal Agency was entrusted with the responsibility of implementing both the schemes.

The audit of RSBY and CHIS was conducted during March to May 2014 covering the period 2008-09 to 2013-14 to assess whether the two schemes as implemented in the State, complied with the guidelines of GOI/GOK. Audit examined the records of the Labour Department, CHIAK and 21[109] empanelled government hospitals (**Appendix 5.1**) in four districts *viz.* Thiruvananthapuram, Idukki, Kozhikode and Wayanad.

5.3.2 Scheme Funding

Under RSBY, the annual insurance premium payable to insurers was estimated as ₹750 per family per year with the contribution of GOI limited to 75 *per cent* of the premium (not exceeding ₹565) and cost of smart card for each family (₹60). As per scheme guidelines, the State Government was to meet the remaining 25 *per cent* of the premium as well as any additional premium in cases where the total premium exceeded ₹750. The beneficiaries were required to pay registration fee of ₹30 per annum as their contribution.

Under CHIS, the insurance premium and cost of smart cards of those belonging to BPL (Poor) list of the State Government was to be met in full by the State Government. These expenses in respect of APL families were to be borne by the beneficiaries themselves. Treatment charges incurred by empanelled hospitals were to be reimbursed to the hospitals by the insurance companies on the basis of claims submitted by them.

Details of assistance received by CHIAK from GOI/GOK towards their share of contribution to RSBY and contribution of GOK for providing insurance coverage to additional beneficiaries under CHIS along with expenditure on premium during 2008-14 are given in **Table 5.6.**

[109] Of the 21 empanelled Government hospitals, insurance facilities were discontinued in two hospitals (CHC Vellarada and PHC Kattappana)

Table 5.6: Year-wise details of receipts for RSBY and CHIS and premium paid

(₹ in crore)

Year	Scheme funding received from			Registration fee	Amount received from APL beneficiaries	Total fund received	Total premium paid	Claim Settled by the insurers
	GOI	GOK						
		RSBY	CHIS					
2008-10	41.94	9.42	NIL	3.30	-	54.66	54.66	45.00
2010-11	42.80	8.60	24.23	4.86	6.50	86.99	86.99	113.00
2011-12	65.92	16.98	114.62	7.35	2.65	207.52	207.52	212.00
2012-13	128.80[110]	92.73[111]	80.00	7.92	1.16	310.61	310.61	181.00
2013-14	105.25	27.51	71.54	8.39	0.03	212.72	212.72	168.27
TOTAL	**384.71**	**155.24**	**290.39**	**31.82**	**10.34**	**872.50**	**872.50**	**719.27**

(Source: Data supplied by CHIAK)

The audit observations are discussed below:

5.3.3 Receipt of assistance from GOI

As per the MoU (September 2008), total number of household beneficiaries eligible for enrolment under RSBY was 12,66,407. The State was, thus, entitled to obtain from GOI 75 *per cent* of premium paid to insurers in respect of 12,66,407 households. Audit noticed that GOK did not claim reimbursement in respect of 87,407 household beneficiaries each year, during the period 2010-14. Understating the number of RSBY beneficiaries by 87,407 households in each year during 2010-14 resulted in non-receipt of assistance of ₹18.64 crore[112] from GOI. On being asked by Audit about the reasons for reporting less number of beneficiaries to GOI and resultant loss of GOI assistance of ₹18.64 crore, GOK replied (December 2014) that central share was claimed on the basis of State Government order dated 4 July 2008 wherein BPL families as per Planning Commission was estimated to be 11.79 lakh. The reply is not acceptable in view of the fact that both GOI and GOK had agreed in the MoU signed between them (September 2008) that the State had 12,66,407 eligible BPL families. As the number of beneficiaries enrolled under the scheme during 2010-11 onwards was more than 12.66 lakh, failure on the part of GOK to claim reimbursement of GOI's assistance in respect of 87,407 household beneficiaries resulted in the State losing GOI assistance of ₹18.64 crore.

[110] Increase in GOI assistance for RSBY due to inclusion of additional categories of beneficiaries like MGNREGA workers, Building & Other Construction Workers, Railway Porters, Auto/Taxi drivers, Beedi workers, Domestic Workers, Street Vendors, Mine Workers, Rickshaw Drivers/Pullers, Rag pickers, Sanitation Workers and Weavers & Textile workers

[111] Premium payable to insurer during 2012-13 rose to ₹1100 from ₹748 in the previous year. Since GOI guidelines required any additional premium above ₹750 to be paid by State Government, the contribution of GOK to RSBY increased during the year

[112] Method of calculation – {75 *per cent* of (Premium – 60) + 60} x 87407. In case where the premium exceeds ₹750, the amount receivable is ₹565 + 60
2010-11: {75% (464-60) + 60} x 87407 = ₹3.17 cr, 2011-12: {75% (748-60) + 60} x 87407 = ₹5.04 cr, 2012-13: {565+60} x 87407 = ₹5.46 cr, 2013-14: {75% (738-60) + 60} x 87407 = ₹4.97 cr

5.3.4 Observations on Contract Management

5.3.4.1 Payments made to insurance companies prior to execution of agreement

As per agreements entered into between the insurers and CHIAK, the payments were to be made to insurers in three instalments. It was however noticed that 100 *per cent* of the premium payable during the years 2012-14 were paid prior to execution of agreements with the insurers. Details of the payment of ₹654.91 crore made prior to execution of agreement with insurance companies, are given in **Table 5.7**.

Table 5.7: Payments made without executing agreement

Year	Name of the Insurer	Date of execution of agreement	Total payment made to the insurance company (₹ in crore)	Amount paid before executing the agreement (₹ in crore)	Dates of Payment
2011-12	M/s United India Insurance Co. Ltd.	06.12.2011	207.52	131.58	31.03.2011to 15.11.2011
2012-13	- do -	27.08.2013	310.61	310.61	01.08.2012 to 01.08.2013
2013-14	M/s Reliance General Insurance Co. Ltd.	05.06.2014	212.72	212.72	15.06.2013 to 28.03.2014
TOTAL			**730.85**	**654.91**	

(Source: Data furnished by CHIAK)

GOK stated (October 2014) that the observance of procedural formalities resulted in delay in executing agreement. It also stated that while releasing the premium, it was ensured that the terms as per the actual agreement were honoured by the Insurance Company very meticulously by an interim agreement. The reply is not tenable in view of the fact that there were no interim agreements in place during 2011-12 and 2012-13. It is also interesting to note that the scheme was functioning in the state during 2013-14 on the basis of an interim agreement with the final agreement executed only after close of the year (June 2014). Payment of premium of ₹654.91 crore prior to execution of agreements with the insurers during 2011-14 is a dangerous proposition for which responsibility of the persons concerned may be fixed.

5.3.4.2 Undue favour to M/s Reliance General Insurance Company Ltd., in giving extension of contract for the year 2014-15

M/s Reliance General Insurance Company Ltd. (RGIL) was the insurer under both RSBY and CHIS in the State for the year 2013-14. As per tender conditions, the period of contract would be for three years from the effective date subject to renewal of contract on yearly basis, based on parameters fixed by the State Government/CHIAK for such renewal. CHIAK was required to assess the performance of RGIL on the basis of eight parameters before extending the contract

for 2014-15. As per the performance indicators, RGIL had to obtain not less than 50 marks out of 80 to become eligible for getting extension in tenure of contract. The contract with RGIL was extended to 2014-15 as they obtained 56 marks on the basis of an analysis of performance of RGIL done by CHIAK.

Audit, however noticed that two of the parameters on the basis of which marks were to be awarded related to 'Empanelling at least 50 *per cent* of the eligible private health care providers (as per RSBY criteria) in each district' and 'At least 75 *per cent* of the claims to be settled by the insurer within 21 days of the receipt of the claim'. As per the evaluation parameters, the insurer was to be awarded 5 marks for empanelment of at least 50 *per cent* of eligible private health care providers (numbers to be given by respective district administration). Regarding settlement of at least 75 *per cent* of claims within 21 days of their receipt, the evaluation parameters provided for awarding five marks for settlement of claims '> 70 *per cent*' and six marks for settlement of claims between '70 and 75 *per cent*'. Analysis of data furnished by CHIAK revealed that during the year 2013-14, RGIL had empanelled only 16 *per cent* of private hospitals and could settle only 55 *per cent* of the claims within 21 days of receipt of the claim. As their performance was not as per the prescribed standards, they were not eligible to get any marks on this account. However, CHIAK had wrongly awarded them 7 marks for empanelment of hospitals and 5 marks for claim settlement. Thus, defective evaluation by CHIAK enabled RGIL to obtain 56 marks against the actual 44 marks.

CHIAK stated (July 2014) that visits to private hospitals during 2008-10 revealed that the hospitals were unwilling to join the scheme due to low package rates offered under the schemes. It also stated (July 2014) that marks were therefore given to the insurance company based on the number of interested hospitals and not the hospitals having minimum infrastructure facility as required in the evaluation format. GOK stated (October 2014) that major private hospitals stayed away from the scheme and that marks for empanelment were awarded on the basis of the number of hospitals recommended by CHIAK and not by the total number of hospitals in the State. Reply is not tenable as Notice Inviting Tender (NIT) conditions required that marks should be awarded on the basis of number of hospitals furnished by the district administration. CHIAK had not obtained any such list from district administration. Regarding the marks awarded in the case of claim settlement, GOK stated that the symbol '>' should be construed as '<' and five marks were awarded accordingly. The Government's contention is not correct as it would imply that even if no claim is settled within the stipulated period, the insurer would be eligible for five marks which obviously is not the intention behind fixing the criteria. Moreover, the criteria required the insurer to settle at least 75 *per cent* of the claims within 21 days of their receipt. The dilution of evaluation criteria by CHIAK and State Level Monitoring Committee in an arbitrary manner by flouting basic parameters facilitated RGIL to obtain extension of contract for the year 2014-15 without competitive bidding besides denying opportunity to other insurers to participate in the bid in a transparent manner on equal footings.

5.3.5 Enrolment of beneficiaries and empanelment of hospitals

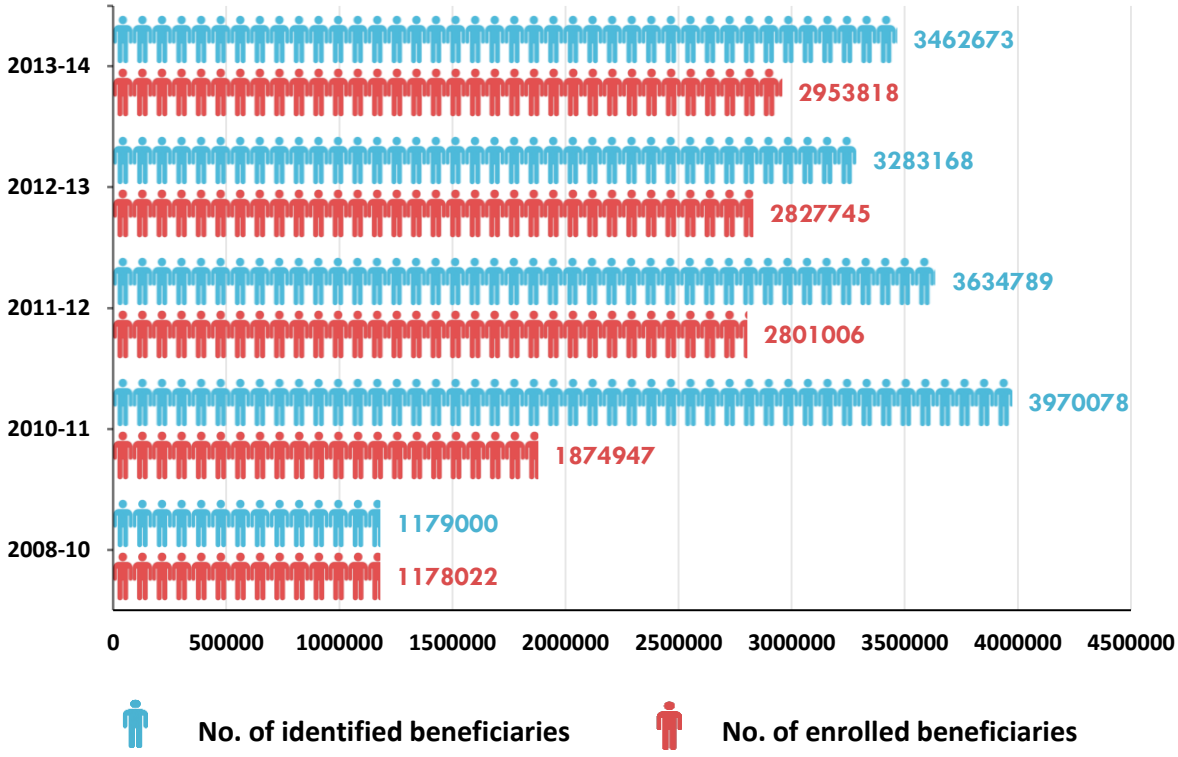
5.3.5.1 Beneficiary identification and enrolment

As per GOI guidelines, it was the responsibility of the State Government to verify the eligibility of the BPL beneficiaries and their family members and furnish the details to the insurance providers. CHIAK stated in its Administration Report for 2010-11 that the BPL survey conducted during May 2009 was erroneous, incomplete and invited a lot of complaints. It, therefore, obtained the services of AKSHAYA e-Centres[113] in the State to register eligible beneficiaries who reported at these centres with documentary proof of their status. Receipts generated after successful registration were handed over to beneficiaries to be produced subsequently at the time of enrolment. The enrolment of the identified[114] beneficiaries was to be undertaken by the insurers based on the soft data provided by GOK/Nodal Agency who would issue smart cards to the beneficiaries at enrolment station level/village level itself during the enrolment period.

Audit noticed that there was shortfall in enrolling the identified beneficiaries in the State during the period 2008-14, as depicted in **Chart 5.1**:

Chart 5.1

Shortfall in enrolment of identified beneficiaries



[113] AKSHAYA e-Centres are a broadband enabled information hub set up by Government of Kerala to ensure that benefit of information communication technology is available to the common man

[114] Identified beneficiaries - Eligible beneficiaries, reporting at AKSHAYA centres on the basis of advertisements issued through the media are registered and designated as Identified beneficiaries

The shortfall in enrolment during 2010-14 ranged from 14 *per cent* to 52.77 *per cent.* The maximum shortfall in enrolment was noticed during 2010-11. In test checked districts, maximum shortfall in enrolment against identified beneficiaries ranged from 1,50,045 in Kozhikode district to 2,32,255 in Wayanad district during 2010-11.The situation improved by 2013-14 when shortfall in enrolment ranged between 36,239 in Kozhikode to 81,736 in Thiruvananthapuram district.

CHIAK attributed (August 2014) the reasons for low enrolment to their initial dependence on BPL data of 2002. CHIAK stated that since enrolment happened six years after data preparation, enrolment teams of insurance company could not identify families as per the list. GOK also concurred (October 2014) with the view. The reply was not correct in view of the fact that the identification process (registration through AKSHAYA e-Centres) was done every year since 2010-11. Since the AKSHAYA e-Centres identified the beneficiaries every year, lower rate of enrolment indicate failure of the insurance company to enroll all identified beneficiaries.

5.3.5.2 Enrolment of Scheduled Tribe (ST) beneficiaries

During 2013-14, about 85 *per cent* of the identified beneficiaries in the State were enrolled under the schemes. However, enrolment among the Scheduled Tribe (ST) population in the State during the year was only 42 *per cent*. The district of Wayanad recorded an enrolment of only 29 *per cent* during 2013-14 which has the largest ST population (37,302 families) in the State.

The Project Officer, Integrated Tribal Development Programme, Wayanad reported that the rate of enrolment in Wayanad district was low due to inadequate enrolment centres near the ST settlements (*Kudi*), poor awareness about the schemes, ST people getting free medical treatment and unwillingness to pay registration charges. GOK admitted (October 2014) the lapses and stated that corrective steps had been initiated, including awareness about the schemes with the help of tribal promoters, more enrolment centres in tribal settlements and waiver of registration fees for ST families in the on-going enrolment (2014-15).

GOK also stated that there was reluctance on the part of ST families to obtain treatment under RSBY which offers free treatment up to ₹30,000 per annum as the ST department was rendering treatment assistance without any financial limit including payment of daily allowance of ₹100 and ₹200 to the patients and bystanders respectively. Government's reply must be viewed in the context of the fact that while beneficiaries under RSBY could avail treatment in both empanelled government and private hospitals, treatment assistance offered by the ST department could be availed only from government hospitals. Thus, the ST population were deprived of the treatment in a wider range of hospitals (including private hospitals) empanelled under RSBY scheme.

5.3.5.3 Empanelment of Hospitals

Effectiveness of implementation of the schemes depends on the availability of sufficient number of empanelled hospitals. As per guidelines/tender stipulations,

insurers were required to empanel hospitals having adequate facilities and offering requisite services after inspection by a qualified technical team of the insurers or their representatives in consultation with CHIAK/GOK.

GOK authorised (October 2008) the Director of Health Services (DHS) to enter into agreement with the insurance companies for empanelment of all government hospitals to ensure benefits to the patients. GOK also ordered (January 2009) that all 12 Employees' State Insurance (ESI) hospitals in the State may be empanelled for providing treatment. The list of empanelled hospitals for the period up to 2012-13 was not available with the CHIAK resulting in its inability to monitor and ensure easy accessibility of medical services to the beneficiaries.

Every year DHS enters into an agreement with the insurance companies on behalf of all government hospitals. However, it was seen that only 27 *per cent* (147 out of 544) of the government hospitals and none of the 12 ESI hospitals were empanelled so far (March 2014). In the test checked districts, only 50 out of 131 eligible government hospitals were empanelled.

GOK replied (December 2014) that private hospitals willing to be empanelled and government hospitals with IP facility were empanelled by insurance companies. However, some empanelled government hospitals were not providing the scheme benefits due to inadequate staff. It further stated that all ESI hospitals declined to implement the scheme as they were not prepared to setup separate drug banks for RSBY and ESI patients.

The reply is not acceptable as only 147 out of 544 government hospitals with IP facilities were empanelled by insurance companies. Moreover, Government's failure to enforce its own orders with respect to empanelling ESI hospitals resulted in failure to ensure easy accessibility of medical services and thereby denying the facility to beneficiaries though they were covered by insurance.

5.3.6 Fund management by hospitals

5.3.6.1 Settlement of Claims and development of hospitals

GOK envisaged (July 2008) that the bulk of the insurance premium paid to the insurers should flow back to the public health care system itself. The hospitals had to follow stipulated procedures and submit claims to the insurance companies for obtaining reimbursement. Audit noticed that test checked empanelled government hospitals, failed to recover ₹12.65 crore from insurance companies as elaborated below:

Claims submitted by hospitals but not processed by insurers

Biometric and entitlement data of RSBY/CHIS beneficiaries were stored in smart cards issued to them. All transactions in the hospitals were processed in offline mode and recorded in the smart card at the time of discharge of patient. The details of such transactions recorded in the hospital database were then uploaded in the computer system of the insurance company for claim processing on a daily basis in order to obtain reimbursement of treatment charges.

Audit noticed that 22,330 claims preferred by 14[115] test checked government hospitals during 2008-13 were not processed by the insurers as the same were not received by the servers of the insurance company. But it was seen that the claim amount was deducted from the entitled hospitalisation coverage (₹30,000) of the beneficiary during the recording process at hospitals and in smart card. Thus, failure to process the claims already deducted from smart cards resulted in loss of ₹10.64 crore to hospitals and resultant undue benefit of the same amount to the insurers.

CHIAK replied (October 2014) that in hospitals, mostly government hospitals, transaction data were lost due to virus attacks, formatting of hard disks and damage of computer hardware because of power fluctuations and non-availability of UPS, etc. It also stated that the insurance company was willing to settle the claims on production of medical documents/transaction slips[116] by the empanelled hospitals. While five of the 14 test checked hospitals reported that data prior to 1 April 2013 was lost due to formatting of computer, four hospitals cited the same reason for loss of data prior to 1 April 2014. Twelve of the 14 hospitals admitted that they have not furnished any claim in this regard for want of documents to support the claim.

The reply is an acceptance of failure to observe the due procedure by the Government/ESI hospitals. No action was also taken against officials responsible for formatting of hard disks without taking backups which had resulted in data/financial loss.

GOK also stated that for all claims from 2013-14 onwards, submission of original case sheets, discharge and receipt for ₹100 paid as TA could be submitted by the empanelled hospitals to the insurers in the event of data loss and that the documentary records would be considered on merits. Government has, through this reply, also confirmed the audit observation that the loss incurred by hospitals during 2008-13 of ₹10.64 crore is irrecoverable.

Claims admitted but payments withheld by the insurer

Contracts between CHIAK and insurers required the insurers to complete the claim process and make payments/reject claims within one month of receipt of the claim. Audit noticed that United India Insurance Company Ltd., had withheld admitted claims of ₹5.21 crore in the fourth round of payment for 2012-13 on account of an unsettled dispute for 2009-10, details of which are enumerated in the succeeding paragraphs.

Scrutiny revealed that during 2009-10, policy end date for rural beneficiaries was March 2010. Urban beneficiaries (1,03,240) were enrolled for the first time in July 2009 and the premium comprising both GOI and GOK shares for the full year (up to June 2010) was paid to the insurance agency. Subsequently, in order to have a uniform policy, end date for both rural and urban beneficiaries, GOI directed that the end date for urban beneficiaries during 2009-10 be curtailed to March 2010.

[115] Five test checked hospitals *viz.*, 1. CHC Meenangadi, 2. CHC Kallara 3. General Hospital, Kozhikode 4. THQ Chirayinkeezh and 5. W&C Thiruvananthapuram excluded from the samples as the data provided by them are not reliable

[116] Electronic slip generated from the transaction management software at the time of each transaction

Since a fresh contract was entered into with the same insurer for the period April 2010 to March 2011 for both rural and urban beneficiaries, GOI contended that the premium for urban beneficiaries for the three months from April 2010 to June 2010 was already covered under the contract for 2010-11. GOI therefore, effected a pro-rata deduction of ₹1.99 crore in respect of 1,03,240 urban cards for the three months (April 2010 to June 2010) from the central share payable in subsequent years. Consequently, CHIAK recovered from the insurer ₹2.42 crore (GOI share ₹1.99 crore + GOK share ₹0.43 crore) by adjustment from the premium payable to them for 2011-13.

The insurer protested the deduction made by CHIAK and approached the National Grievance Redressal Committee which rejected its plea (September 2012) for release of the withheld premium. The insurer, in retaliation, irregularly retained admitted claims of ₹5.21 crore without releasing to the hospitals.

At the instance of audit, the matter was taken up with the insurance company by CHIAK and ₹5.21 crore was released (September - October 2014) by them to the hospitals.

Partial admission of claims by M/s Reliance General Insurance Company Ltd.

As per Appendix 3 of NIT for the year 2013-14, the package rate should cover the entire cost of treatment of the patient from date of reporting (one day pre hospitalisation) to his discharge and five days after discharge, transport expenses and any complication while in hospital, making the transaction truly cashless to the patient. RGIL was the insurer for the year 2013-14. Audit noticed that insurer irregularly reduced the claim amount of ₹2.01 crore in 6841 cases of 16 test checked hospitals on the ground of prolonged stay, wrong disease description, discharge not recorded in Transaction Management Software, etc. State-wide data furnished by CHIAK revealed that an amount of ₹8.75 crore was irregularly reduced in 36,665 cases by the insurer during 2013-14, resulting in undue benefit to the insurer at the cost of empanelled hospitals. On CHIAK raising the issue with the State Grievance Redressal Committee, the insurer agreed (June 2014) to accept and make payment of all partially settled claims for the year 2013-14 and assured that they would not resort to similar partial payment in future. However, the withheld amount was yet to be recovered from the insurer (November 2014)

Utilisation of funds by hospitals

GOK envisaged (October 2008) that money received by government hospitals from insurers against claims shall be utilised in the hospital with the approval of Hospital Management Committee (HMC)/Hospital Development Society (HDS). It stipulated payment of 15 *per cent* of claim amount as incentives to Doctors, Nurses, Lab technicians, etc. The remaining 85 *per cent* was to be retained by the HMC/HDS for filling critical gaps in providing quality patient care, drugs and consumables, hiring manpower like Speciality Doctors, etc. Test check of records of 18 hospitals[117] revealed that ₹16.49 crore (24 *per cent*) of the ₹67.82 crore

[117] Details not furnished by one hospital

including interest[118], received by them during 2008-14 from insurance companies remained unutilised. Expenditure incurred by these hospitals on development of infrastructure was only ₹4.27 crore (six *per cent*). Almost 31 *per cent* of these funds were spent on purchase of medicines despite GOK insisting (October 2008) that doctors in government hospitals prescribe generic drugs supplied freely by the State Government. The remaining 39 *per cent* was expended on transport allowance to patients, incentives to staff, laboratory investigation charges, etc. Periodical review by Government on utilization of these funds could have ensured better utilization of funds.

While admitting the facts, seven hospitals reported that there was no specific instruction to utilise the funds fully. GOK stated that guidelines for utilization of reimbursed amount of RSBY/CHIS in Government hospitals were issued by the Health and Family Welfare Department. It also stated that since CHIAK had very limited control over Government hospitals especially on internal finance, the matter would be taken up with the Health and Family Welfare department.

Payment of Transport Allowance to patients

GOI guidelines required empanelled hospitals to pay Transport Allowance (TA) of ₹100 to each patient upon discharge. Pamphlets given to beneficiaries at the time of enrolment also indicated that TA would be paid to patients at the time of discharge. Audit noticed that 15 test checked hospitals did not provide TA to patients amounting to ₹1.44 crore in 1,43,705 cases up to March 2014. The actual amount in respect of all the hospitals in the State will be much more.

DHS admitted (November 2014), the non-payment of TA to patients and cited lack of awareness among Superintendents/Lay Secretaries[119] of Government hospitals as reason for the same. GOK stated that instructions had since been issued to all hospitals to ensure proper distribution and documentation of TA to all RSBY/CHIS beneficiaries.

5.3.7 Monitoring and Grievance Redressal mechanism

GOI guidelines required State Governments to establish grievance redressal mechanisms. However, norms for constituting Monitoring and Grievance Redressal Forums at the State and District level were framed by GOK only in November 2010. While the first meeting of the State Grievance Redressal Committee (SGRC) was held in November 2010, Audit noticed that the first meetings of the District Grievance Redressal Committees (DGRC) were held only during June to October 2012. Delay in constituting the grievance redressal forums deprived the intended benefits to stakeholders. As per the instructions issued by GOI in April 2012, there would be a fixed date once a month for addressing the grievances of stakeholders in the respective committees (National/State/District Grievance Redressal Committees). Shortfall in convening the meetings of DGRCs in the selected districts ranged from 83 *per cent* to 100 *per cent* during 2012-13. The DGRCs in Idukki and Wayanad did not meet even once during the year 2012-13. Shortfall in

[118] 'Interest' is the interest received on flow back funds deposited in banks
[119] Lay Secretary is the administrative head and also the drawing and disbursing officer of the hospital

convening DGRC meetings ranged between 50 *per cent* (Thiruvananthapuram) to 66 *per cent* (Idukki) in 2013-14. SGRC met only thrice during 2012-13 and twice during 2013-14.

GOK replied that as no complaints were received by the Grievance Nodal Officer, the committee meetings were not convened during the early period. Reply is not tenable since 11 of the test checked hospitals informed that they were unaware of the existence of the grievance redressal mechanism and were forwarding complaints to the insurance companies.

5.3.8 Functioning of CHIAK, the State Nodal Agency

GOI instructions (May 2010) required the State Nodal Agency to set up a server at the state level to store the enrolment and hospitalisation data from all the districts. It required the State Nodal Agency to work with the insurance companies to study and analyse the data for improving the implementation of the scheme. CHIAK was the State Nodal Agency for both the schemes. Tender documents from 2012-13[120] required the insurers to provide CHIAK with real time access to the enrolment and hospitalization data whereby reports regarding enrolment, claim data and such other information would be obtained by the nodal agency through a web based system. Additionally, insurers were also required to provide Management Information System reports on enrolment, claim data, customer grievances and such other details as required by Government. Audit noticed that agreements with the insurers did not have a clause requiring insurers to provide real time access to data and the same was not provided to CHIAK up to March 2013. CHIAK stated that they were provided raw data in different formats which could not be processed by them. Contrary to the provisions contained in the agreements entered into between CHIAK and the insurers, details of rejected and partially rejected claims were also not furnished to CHIAK by the insurers. This reduced the effectiveness of CHIAK as Nodal Agency. GOK replied that with introduction of Transaction Management Software (TMS) developed by GOI, the data fields were standardised and direct flow of data from hospital to SNA was possible. But the TMS introduced from 1 April 2013 could not be implemented successfully during 2013-14.

5.3.9 Conclusion

Despite rise in number of registered beneficiaries year after year, all eligible government/ESI hospitals were not empanelled. There was shortfall in enrolment of identified beneficiaries under RSBY/CHIS. Enrolment of Scheduled Tribe beneficiaries in the State was only 42 *per cent* while enrolment of ST beneficiaries in Wayanad district was only 29 *per cent* during 2013-14. Government's intention to utilise the flow back of insurance premium to improve the health care system did not materialise fully as about 24 *per cent* of the funds remained unutilised with the hospitals. Test checked empanelled hospitals also failed to recover ₹12.65 crore from insurance companies due to partial settlement/loss of data on claims. The patients were also deprived of the benefit of TA.

[120] During 2008-12, neither tender documents nor agreements specified real time access to data. These only required submission of reports on a regular basis

AUDIT OF TRANSACTIONS

Failure of Oversight/Administrative Controls

HEALTH & FAMILY WELFARE DEPARTMENT

5.4 Misappropriation of Government Money in District Ayurveda Hospital, Palakkad

Non-adherence to codal provisions and lack of supervision resulted in misappropriation of ₹9.30 lakh.

As per Rule 131 (a) of the Kerala Treasury Code (KTC), the contents of the cash chest or the cash on hand shall be counted by the head of the office or, under his orders, by a gazetted subordinate at the close of the business on each working day and verified with the book balance in the Cash Book and other registers after they have been closed for the day. Moreover, Rule 7 (2) of the Kerala Financial Code (KFC) - Vol. I stipulates that money received on account of Government dues should be remitted into Treasury the next working day. When this is not possible owing to distance from the Treasury, or any other cause, the money should be remitted periodically, i.e. at least once in a week on the last working day.

Section 12 of the Kerala Indigenous Medicine Departmental Manual stipulates that the District Indigenous Medical Officers (DMO, ISM) shall make intensive annual inspection of hospitals and dispensaries under their jurisdictions.

The Chief Medical Officer (CMO), District Ayurveda Hospital, Palakkad (DAH) was maintaining four separate cash books for General, Hospital Management Committee (HMC[121]), Kerala Health Research and Welfare Society (KHRWS)[122] and NRHM (Ayush funds[123]) transactions. He was also the custodian of cash. As per the entries in the four cash books, the closing balance of cash as on 25 November 2013 was ₹9.30 lakh[124]. However, a physical verification of cash conducted by the CMO at the instance of Audit revealed that the total opening cash balance as on 26 November 2013 was 'Nil', indicating misappropriation of funds. The CMO admitted (November 2013) the shortage of money and certified that there were no unaccounted advances, expenses or receipt as on 26 November 2013.

[121] Hospital Management Committees are constituted vide GO dated 14.3.2007 to make effective, the working of the concerned health institution, by discharging the entrusted responsibilities. Source of funds includes RSBY revenue as well as receipts from other hospital services (GO dated 22.02.2010)

[122] A Government owned society established in 1973 to make better infrastructure facilities in Medical Colleges and other Government hospitals and to strengthen public health care system

[123] National Rural Health Mission (funds received from Department of AYUSH, Government of India)

[124] General Cash Book (₹1.31 lakh); HMC (₹6.11 lakh); KHRWS (₹1.88 lakh); NRHM Ayush (₹ NIL)

On detecting the shortage of money, Audit undertook a detailed scrutiny of various cash books maintained in the DAH. It was seen during audit that from July 2012 to November 2013, the CMO disregarding the provisions of Rule 7 (2) of KFC had neither remitted all general cash into the Treasury nor remitted the relevant cash to the KHRWS/HMC accounts except in a few cases. The CMO did not pay the electricity and water charges despite receiving funds from the District Panchayath for the purpose. He had also withdrawn advances from HMC accounts using self cheques in excess of actual requirement.

It was further observed that the DMO (ISM) was informed by the Regional Manager of KHRWS (October 2013) about the non- remittance of receipts under KHRWS accounts in the bank by the CMO. However, other than directing the CMO to remit the receipts into bank, no action was taken by the DMO to investigate the issue further. Had the DMO conducted regular inspections at the DAH as stipulated under Section 12 of the Kerala Indigenous Medicine Departmental Manual, the accumulation of large cash balances, its non-remittance and eventual misappropriation could have been avoided.

It was also noticed that though the CMO was responsible for maintaining the Cash Book and authorising payment, the cash book was not regularly updated and physical cash balance not checked which is in violation of Rule 131 (a) of KTC. Thus there was a failure in internal control system.

Thus, non-adherence to codal provisions by the CMO and laxity on the part of the DMO facilitated misappropriation of ₹9.30 lakh at the DAH. On pointing out this misappropriation by Audit, Government placed the CMO under suspension (December 2013) and directed him (September 2014) to repay ₹9.30 lakh with interest at the rate of 18 *per cent* from 25 November 2013 till date of repayment.

5.5 Misappropriation of Rashtriya Swasthya Bima Yojana fund

Failure to adhere to the codal provisions led to misappropriation of ₹7.36 lakh.

Rule 92 (a) (i) of Kerala Treasury Code stipulates that every officer receiving money on behalf of Government should maintain a Cash Book. Further, as per Rule 253, a drawing officer should invariably keep cheque books in his personal custody under lock and key.

According to the guidelines issued by the Government of Kerala for implementation of Rashtriya Swasthya Bima Yojana (RSBY)[125], insurance claim amounts when received from the Insurance Company should be deposited in a separate bank account and all the payments except transportation allowance of ₹100 to be payable to patients shall be made

[125] Refer to paragraph no. 5.3

through cheques only. The Superintendent, Medical College Hospital, Thiruvananthapuram (MCH) operated a Savings Bank (SB) Account in a Public Sector Bank in Thiruvananthapuram to account for the receipts and expenditures under RSBY. The Superintendent, MCH was also the Secretary cum Treasurer of the Medical College Hospital Development Society (HDS), Thiruvananthapuram and was authorised to operate the bank account on behalf of HDS. Audit noticed that the Superintendent, MCH did not maintain a cash book for accounting transactions relating to RSBY. Audit verified the Cheque Issue Register, bank statement of RSBY and HDS and Cash Book of HDS for the period 2010-11, and noticed that four cheques[126] amounting to ₹7.36 lakh issued from the RSBY account in favour of the Secretary, HDS, though encashed from RSBY account was not remitted into the HDS account. Even though the cheques were issued from RSBY account, they were neither recorded in the Cheque Issue Register of RSBY nor in the Cash Book of HDS.

On this being pointed out, Superintendent MCH, after verification of the records, confirmed (June 2014) the audit observation and stated that instead of transferring the amount to the account of the Secretary, HDS, the Office Superintendent had received the amount in cash in respect of all transactions. Further, he expressed doubt about the genuineness of the signature on the cheques and stated that the matter had been referred to police for investigation (June 2014).

The failure of Superintendent, MCH to maintain Cash Book to account for the receipts and expenditure of RSBY and failure to ensure the safe custody of cheque books, as prescribed in Rule 92 (a) (i) and Rule 253 of Kerala Treasury Code facilitated the misappropriation of money.

Government while admitting the misappropriation (December 2014) stated that it has been decided to refer the case to the Vigilance and Anti-Corruption Bureau for further investigation.

[126] Cheque No. 182451 dated 25.10.2010 - ₹1,95,600
Cheque No. 182453 dated 08.11.2010 - ₹1,98,730
Cheque No. 182455 dated 23.10.2010 - ₹1,45,850
Cheque No. 182456 dated 22.12.2010 - ₹1,96,570

CULTURAL AFFAIRS DEPARTMENT

5.6 Idle investment of ₹59.50 lakh in construction of open enclosure for crocodiles

- **Inordinate delay in construction of open enclosures for crocodiles resulted in unfruitful expenditure of ₹59.50 lakh;**
- **Irregular receipt of ₹62.90 lakh from GOI for the same purpose and its diversion.**

As part of modernization of Thiruvananthapuram zoo, the Director, Museums and Zoos, Thiruvananthapuram (Director) submitted a proposal to the State Government (February 2005) for construction of four open enclosures to house and display four different species of crocodiles. The proposal envisaged the creation of a dry moat (trench) as a physical barrier on the visitors side, an artificially created water body, sand banks, islands, suitable landscaping, etc., including two glass viewing galleries to view the crocodiles through the water. Based on the proposal, the State Government accorded (March 2005) administrative sanction for the construction of four enclosures at an estimated cost of ₹85.30 lakh. Sanction was also accorded to entrust the work to the Public Works Department (PWD). Consequently, the entire amount of ₹85.30 lakh was deposited with the PWD in March 2005.

PWD entrusted the work 'Construction of new open enclosures for crocodiles (four numbers) in Thiruvananthapuram zoo as part of modernization of zoo' to a contractor (July 2005). The work consisted of 116 items to be completed at a cost of ₹61.78 lakh. Time of completion of work was fixed as March 2007. The PWD incorrectly declared the work as completed (February 2010) and paid ₹59.50 lakh to the contractor, though 32 items of work including work on the viewing gallery had not been completed (July 2014). The Director stated (July 2014) that the issue of non-completion of work had been taken up with the PWD on many occasions. Thus, even after nine years and availability of adequate funds, the project had not been completed and the crocodiles were still housed in unsuitable cages with no viewing facilities for the visitors visiting the zoo. This has resulted in an idle investment of ₹59.50 lakh.

It was further observed that the Director wrongly submitted a similar proposal (May 2005), to the Central Zoo Authority (CZA), Government of India for 100 *per cent* financial assistance for construction of four enclosures by concealing the fact that the State Government had already accorded administrative approval and sanctioned ₹85.30 lakh for the same project (March 2005). GOI had also released funds to the tune of ₹62.90 lakh[127] for construction of three enclosures. Contrary to the provisions of the Memorandum of Understanding (MOU) entered into between the CZA and the State Government which required that money released by the CZA

[127] First instalment of ₹30 lakh received in October 2005 and Second instalment of ₹32.90 lakh received in December 2006

should not be taken into revenue account and should be used only for the purpose for which it was sanctioned, the first instalment of ₹30 lakh was credited to the Revenue Account of the State Government and the final instalment of ₹32.90 lakh was retained by the Directorate. The Director also submitted (July 2012) Utilisation Certificate to the GOI falsely certifying that ₹59.50 lakh of GOI assistance had been spent on the said work while the expenditure was actually incurred from State Government funds and the GOI funds were retained in treasury/with the Director.

The submission of false proposal to GOI by the Director resulted in receiving ₹62.90 lakh deceitfully. This further led to consequent misrepresentation of facts and diversion of GOIs funds for which the State Government needs to fix accountability.

Government admitted the lapse (September 2014) on the part of the Director in submitting proposal for the same work to both the CZA and GOK and attributed it to procedural lapses. Government also stated that the same was done in good faith and intention for the development and modernisation of Zoological Garden. Moreover, the work of crocodile enclosures was still remaining incomplete even after nine years which is indicative of lack of seriousness on the part of the Government in taking care of public affairs.

The Government's reply is not acceptable as it has failed to fix responsibility for serious lapses on the part of the departmental authorities in obtaining and retaining GOI funds deceitfully.

DEPARTMENT OF HEALTH AND FAMILY WELFARE, HIGHER EDUCATION AND LABOUR AND SKILLS

5.7 Avoidable payment of penalty to Kerala State Electricity Board

Failure of three departments to comply with the provisions of High Tension Tariff Revision Order of Kerala State Electricity Board led to avoidable payment of penalty charges amounting to ₹2.85 crore.

Kerala State Electricity Board (KSEB) is a transmission utility and a distribution licensee in Kerala. As per the Kerala State Electricity Board High Tension Tariff Revision Order, 2001(August 2001), KSEB introduced differential pricing system for High Tension[128] (HT)/Deemed[129] HT consumers with the help of Time of Day[130] (TOD) meters. The system was introduced based on policy decisions taken in 1997 and envisaged reduction in peak time demand of the HT/Deemed HT consumers. In this system, the demand/energy requirement of the HT/Deemed HT

[128] A High tension Consumer (HT) means a consumer who is supplied with electrical energy at a voltage of either 22000 volts or 11000 volts under normal conditions

[129] Consumers who were having a connected load between 151 and 250 Kilovolt-ampere (KVA) as on 01 July 1999 and not converted to HT connection were classified by KSEB as deemed HT consumers

[130] It is a meter that records demand, time and energy usage and when installed provides customers with the benefit of reducing utility bill by providing reduced usage rates during off-peak time

consumer is categorised under three time slots *viz.* Normal time (0600hrs to 1800hrs), Peak time (1800hrs to 2200hrs) and Off time (2200hrs to 0600hrs) which is measurable with the help of TOD meter. The tariff for energy charges varied according to the time slots, the highest of 150 *per cent* of ruling energy rates during peak time and lowest of 75 *per cent* of ruling energy rates during Off time. This was intended to encourage the consumers to consume more during off peak hours and less in peak hours. Under the system, all HT/Deemed HT consumers had to purchase and install TOD meters and CT (Current Transformer)/PT (Potential Transformer) at their cost failing which they were to be charged 25 *per cent* extra over the tariff.

Ten deemed HT consumers (17 connections) under three Departments of Government of Kerala *viz.* Health & Family Welfare, Higher Education and Labour and Skills Departments failed to comply with the above directives of KSEB resulting in an avoidable payment of ₹2.85 crore as penalty to KSEB (**Appendix 5.2**) during the period from April 2010 to March 2014.

The Secretary, Printing and Stationery under the Higher Education Department stated (November 2014) that in respect of Government Press, Shornur, the conversion from Low Tension connection to HT connection required installation of transformers and construction of a transformer yard involving an amount of ₹ one crore and that discussions were on with KSEB for exemption from penalty. The Secretary, Labour and Skills stated (November 2014) that in respect of the four ITIs, steps were being taken to execute the works required for complying with the KSEB directives.

The replies are not tenable, as even after passage of more than 12 years after the implementation of High Tension Tariff Revision Order, the Departments did not comply with its provisions resulting in avoidable payment of penalty to KSEB.

Replies from Government in respect of Health and Family Welfare Department and two institutions under the Higher Education Department are awaited (December 2014). Thus, failure of the departments to comply with the provisions of High Tension Tariff Revision Order of KSEB resulted in avoidable payment of penalty charges of ₹2.85 crore.

SCHEDULED CASTES DEVELOPMENT DEPARTMENT

5.8 Non-implementation of a scheme for providing livelihood to the unemployed Scheduled Castes due to non-identification of beneficiaries owing to fixing faulty criteria

Despite availability of ₹2.80 crore in March 2011, a scheme to engage unemployed Scheduled Castes in poultry production failed to take off due to failure in identifying eligible beneficiaries.

The Director of Scheduled Castes Development Department (Department) submitted a proposal to the Government for poultry production in seven districts[131], through 90 units of Self Help Groups (SHG) belonging to scheduled castes community at an estimated cost of ₹2.80 crore. The primary objective of the scheme was to provide livelihood to the unemployed scheduled castes by engaging them in poultry production and thereby empowering the community economically. Government accorded administrative sanction to the scheme in March 2011. The Kerala State Poultry Development Corporation (KEPCO) was designated as the implementing agency for the scheme for which a Memorandum of Understanding (MoU) was signed by Director, Scheduled Castes Development Department with Managing Director, KEPCO in November 2011. However, on receipt of administrative sanction and before signing the MoU, the Department released (May 2011) the entire amount of ₹2.80 crore to KEPCO. The MoU *inter alia* envisaged the following:

- The beneficiaries under the scheme were to be selected by the Department and the list to be communicated to KEPCO.
- KEPCO was to ensure the construction of sheds having an area of 3000 sq. ft. for the project.
- KEPCO was to supply the entire inputs namely chick birds, feed, medicines and broiler chick birds to each SHG.
- The birds, to be reared by the SHGs, were to be taken back by KEPCO after paying a cost for marketing.

As per the MoU, about 63000 birds would be reared by the SHGs and taken back by KEPCO during the project period of one year and would generate revenue of ₹1.90 lakh per year per SHG.

The Department issued (January 2012) instructions to the District Development Officers for Scheduled Castes (District Level Officers) to select beneficiary groups based on the criteria fixed (August 2011) by KEPCO that beneficiaries should possess at least 10 cents of land or more with lorry access and facilities for water and electricity. However, three[132] District Level Officers intimated (March 2012)

[131] Alappuzha, Kollam, Kottayam, Palakkad, Pathanamthitta, Thiruvananthapuram and Thrissur districts
[132] Kollam, Kottayam and Palakkad

their inability to identify the SHGs as the number of SHGs fulfilling the criteria laid down by the Department was very less. Hence, they requested for modification in the selection criteria. It was noticed during audit that the beneficiaries of the scheme had not been identified till date (November 2014) and the selection criteria have also not been modified till date. This shows that the selection criteria fixed by KEPCO was faulty as it was done without making a detailed analysis and considering the ground realities.

In the meanwhile, KEPCO requested the Government (March 2012) for additional funds amounting to ₹2.14 crore or to curtail the number of units to 51 due to cost escalation. Government, therefore, instructed (August 2012) the Department to submit a fresh proposal before the State Level Working Committee. Due to non-implementation of project and non-submission of revised proposal, Government instructed (July 2013) the Department to obtain refund of ₹2.80 crore from KEPCO. On being asked by the Department (September 2013) to refund the money, KEPCO, citing lack of directions from the Department as reason for failure to implement the scheme, submitted (November 2013) a fresh proposal to the Director for consideration and approval. Government accorded (February 2014) administrative sanction to the revised proposal subject to the condition that KEPCO should rework the proposal by including the interest amount accrued on ₹2.80 crore earlier deposited with them and resubmit the proposal to Government for approval. A revised proposal again submitted to the Director by KEPCO in February 2014 and forwarded to Government in May 2014 was still awaiting approval (November 2014).

Thus, due to inability of the Department to identify beneficiaries due to faulty criteria, the scheme initiated (March 2011) with the sole objective of empowering the scheduled castes community socially and economically failed to take off till date (November 2014) besides blocking up of ₹2.80 crore for a period of over three years.

WATER RESOURCES DEPARTMENT

5.9 Unfruitful expenditure on a Water Supply Scheme

Improper planning resulted in unfruitful expenditure of ₹4.67 crore in implementation of a water supply scheme.

Kerala Water Authority (KWA) on behalf of Government of Kerala (GOK) is entrusted with the task of providing quality drinking water and sewage services to the people of the State. The villages of Cheruthuruthy and Nedumpura in Thrissur district were identified (1980) by the State Government as problem villages related to drinking water needs. The existing small water supply schemes of these villages were inadequate and hence, a comprehensive scheme to supply safe drinking water to these villages was planned with the loan assistance of Life Insurance Corporation of India (LIC) in March 2000 at a project cost of ₹8.95 crore. The water for the

scheme was to be drawn from the Bharathapuzha river with intake site at Macherykadavu, about 500 metres upstream to a railway bridge at Cheruthuruthy. After completion of certain components[133] of the work (approximately 40 *per cent* of work) at a cost of ₹2.37 crore, KWA stopped availing loans from LIC due to higher interest rates and difficulty in arranging Government Guarantee for each loan, etc.

The major unfinished components of work like four Million Litres per Day (MLD) Water Treatment Plant, Ground level reservoir, compound wall and part of the distribution system were subsequently proposed to be completed with financial assistance from National Bank for Agriculture and Rural Development (NABARD). GOK accorded administrative sanction in July 2008 for the NABARD assisted Rural Drinking Water Supply Scheme (RDWSS) at a total project cost of ₹8.14 crore[134] on the basis of a Detailed Engineering Report (DER) submitted (May 2008) by KWA.

The work was divided into two packages. Package I included construction and commissioning of four MLD Water Treatment Plant, 10.42 lakh Litre Sump and compound wall at Athiraparambu and Package II included items of work like supplying, laying, testing and commissioning of distribution network of various sizes including 50 m Railway line crossing through overbridge. It was noticed during audit that the Railways had, as early as in August 2008, informed KWA that as per Railway rules, no crossing could be permitted on or within 15 m of any structure. However, KWA awarded (May 2010) the work on Package I for ₹3.74 crore and package II (March 2009) for ₹3.59 crore.

Against the original targeted dates of September 2011 and March 2010 for completion of Packages I and II respectively, about 10 *per cent* of works[135] under Package I and portion of distribution lines which has to cross the railway over bridge at Cheruthuruthy under Package II remains to be completed (October 2014). While the target date for Package I had been revised to December 2014, the work on Package II has come to a standstill from September 2011 onwards for want of Railway's permission. Requests of KWA (January 2010 and 2012) seeking permission to lay pipes through the overbridge at Cheruthuruthy were rejected (January 2012) by the Railways. Attempts by KWA to lay distribution lines across the railway track by "push jack method[136]" or to lay the pipe line through the footpath portion of over-bridge also did not materialise.

The Superintending Engineer, KWA admitted (August 2014) that the objective of the scheme was not achieved as the work of laying pipes across railway tracks was not executed for want of approval from railways. GOK stated (October 2014) that since there was no restrictions on laying pipelines through railway overbridges prior to 2008, the objection from Railways was unexpected.

[133] Intake well cum pump house, 250 mm diameter pumping main, pump set and part of distribution network

[134] Fund provided by LIC : ₹237 lakh, NABARD : ₹577 lakh

[135] The pending work relates to completion of water treatment plant

[136] Push jack method is a method by which horizontal pipe is laid below existing services like Railways, Highways, etc. where general method of pipe laying like trenching is not viable

The reply fails to explain why KWA went ahead with the awarding of Packages I and II in May 2010 and March 2009 respectively when it was already known in August 2008 that the Railways had refused permission to lay distribution lines across railway structures.

The inadequate planning in implementation of RDWSS has resulted in unfruitful expenditure of ₹4.67 crore[137] and resultant non-achievement of objective of providing adequate and safe drinking water to two villages.

(N. NAGARAJAN)
Principal Accountant General
(General and Social Sector Audit), Kerala

Thiruvananthapuram,
The

Countersigned

(SHASHI KANT SHARMA)
Comptroller and Auditor General of India

New Delhi,
The

[137] Package I: ₹1.68 crore
Package II: ₹2.99 crore

APPENDICES

Appendix 1.1

Year-wise break up of outstanding Inspection Reports (IRs) as on 30 June 2014

(Reference: Paragraph 1.7.1; Page 9)

Year	Up to 2009-10	2010-11	2011-12	2012-13	2013-14	Total
POLICE DEPARTMENT						
No. of IRs	53	27	28	36	46	**190**
No. of paragraphs	176	142	164	253	367	**1102**
No. of IRs for which initial reply has not been received (no. of paragraphs)	1 (5)	3 (28)	1 (13)	NIL	8 (75)	**13 (121)**
SCHEDULED TRIBE DEVELOPMENT DEPARTMENT						
No. of IRs	17	5	2	18	27	**69**
No. of paragraphs	68	24	20	118	128	**358**
No. of IRs for which initial reply has not been received (no. of paragraphs)	7 (23)	2 (10)	2 (20)	9 (73)	13 (103)	**33 (229)**
HIGHER EDUCATION DEPARTMENT						
No. of IRs	38	8	13	16	7	**82**
No. of paragraphs	144	49	107	189	71	**560**
No. of IRs for which initial reply has not been received (no. of paragraphs)	NIL	NIL	NIL	NIL	NIL	**NIL**
LOCAL SELF GOVERNMENT DEPARTMENT						
No. of IRs	34	5	5	1	NIL	**45**
No. of paragraphs	105	50	64	11	NIL	**230**
No. of IRs for which initial reply has not been received (no. of paragraphs)	NIL	NIL	NIL	NIL	NIL	**NIL**

Appendix 1.2

Details of Action Taken Notes pending as of September 2014

(Reference: Paragraph 1.7.3; Page 10)

Sl. No.	Department	2011-12	2012-13	Total
1	General Education	1	2	3
2	Health & Family Welfare		3	3
3	Home		1	1
4	Labour and Skills	1		1
5	Scheduled Castes/Scheduled Tribes Development	1		1
6	Sports and Youth Affairs		1	1
7	Water Resources		4	4
	Total	**3**	**11**	**14**

Appendix 1.3

Statement showing the details of paragraphs pending discussion by the Public Accounts Committee as of September 2014

(Reference: Paragraph 1.7.4; Page 10)

Sl. No.	Name of Department	2011-12	2012-13	Total
1	General Education		2	2
2	Health and Family welfare	2	3	5
3	Home		1	1
4	Labour and Skills	2		2
5	Scheduled Castes/Scheduled Tribes Development	1		1
6	Social Justice	1		1
7	Sports and Youth Affairs		1	1
8	Water Resources		4	4
	Total	**6**	**11**	**17**

Appendix 2.1

Details of samples of beneficiary survey

(Reference: Paragraph 2.5; Page 15)

a. CWSN Survey

Sl. No.	Particulars	In State	Selected District/BRCs	Included in Beneficiary Survey
1	No. of Districts	14	5	5
2	No. of BRCs	168	21	21
Categories of CWSN				
1	No. of Visually Impaired	79320	9880	467
2	No. of Hearing Impaired	13384	1894	115
3	No. of Speech Impairment	8873	895	-
4	No. of Orthopedically Impaired	10622	1229	-
5	No. of Cerebral Palsy	7401	470	-
6	No. of Mentally Retarded	28451	4213	-
7	No. of Learning Disability	19541	3990	210
8	No. of Multiple Disability	8593	769	-
9	No. of Autism Spectrum Disorder	2016	310	-
	Total No. of CWSN (2013-14)	**178201**	**23650**	**792**

b. OOSC Survey

District	No. of OOSC surveyed
Thiruvananthapuram	18
Pathanamthitta	3
Ernakulam	10
Thrissur	15
Kasaragod	27
Wayanad	55
Total	**128**

Appendix 2.2

Table showing number of CWSN in each category and RTs deployed

(Reference: Paragraph 2.7.2.5; Page 21)

Sl. No.	BRC	VI & Blind		HI & SI		LI		MR		LD		CP		Autism		MD		Total No. of CWSN	Total No. of RTs
		No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs	No. of CWSN	No. of RTs		
1	Kattakkada	972	0	143	7	88	0	257	6	49	0	42	0	22	0	12	0	1585	13
2	Palode	324	2	174	0	74	0	226	9	191	0	4	0	6	0	38	0	1037	11
3	Parassala	712	0	94	3	68	0	199	7	4	0	12	0	9	0	24	1	1122	11
4	Kaniyapuram	477	0	104	2	48	0	346	7	31	0	14	0	12	0	83	0	1115	9
5	Thiruvalla	333	0	150	0	22	0	129	3	304	0	0	0	3	0	24	2	965	5
6	Konni	200	0	45	1	26	0	172	4	102	0	10	0	5	0	4	1	564	6
7	Adoor	556	0	174	1	27	0	190	5	188	0	20	0	13	0	33	3	1201	9
8	Kothamangalam	402	0	162	3	93	0	294	12	328	0	48	0	22	0	104	0	1453	15
9	Mattancherry	423	0	266	**1**	90	0	371	4	590	0	87	5	33	0	20	0	1880	10
10	Ernakulam	273	0	116	0	56	0	275	10	430	0	55	3	59	0	33	0	1297	13
11	Muvattupuzha	165	0	131	0	26	0	343	5	192	0	13	0	5	0	6	0	881	5
12	N Paravur	220	1	54	1	78	0	129	8	124	0	34	3	21	0	18	0	678	13
13	Wadakkancherry	644	0	135	0	66	0	137	10	228	0	15	0	5	0	23	0	1253	10
14	Mathilakam	424	1	117	0	55	0	122	5	176	0	22	0	47	0	29	0	992	6
15	Chavakkad	834	1	154	0	56	0	131	9	165	0	8	0	10	0	11	0	1369	10
16	Mullasserry	275	0	59	0	31	0	43	5	55	0	0	0	2	0	13	0	478	5
17	Kodakara	731	0	125	0	69	0	194	10	245	0	22	0	23	0	56	0	1465	10
18	Anthikkad	497	2	48	1	16	0	41	5	155	0	8	0	6	0	29	0	800	8
19	Bekel	540	2	163	0	88	0	195	5	115	0	25	0	2	0	132	0	1260	7
20	Kasaragod	547	0	250	0	103	0	283	6	220	0	16	0	2	0	59	0	1480	6
21	Chittarikkal	331	0	125	0	49	0	136	7	98	0	15	0	3	0	18	0	775	7
	Total	**9880**	**9**	**2789**	**20**	**1229**	**0**	**4213**	**142**	**3990**	**0**	**470**	**11**	**310**	**0**	**769**	**7**	**23650**	**189**

VI - Visual Impairment (Low vision)
HI - Hearing Impairment
SI - Speech Impairment
MR - Mental Retardation
LI - Locomotor Impairment
LD - Learning Disability
CP - Cerebral Palsy
MD - Multiple Disability

No. RTs having Degree in Special Education	18
No. RTs having Diploma in Special Education	171*
Total	**189**

* includes 7 RTs having Diploma in Community Based Rehabilitation (DCBR)

Appendix 3.1

List of institutions selected

(Reference: Paragraph 3.5; Page 38)

Type of Ayurveda institution		**No. of institution available in five selected districts**	**Number audited**	**Percentage audited**	**No. of patients surveyed**
Ayurveda colleges	Government	1	1	100	Nil
	Government Aided	2	2		
Government Ayurveda hospitals including five speciality hospitals		56	14 (including four speciality hospitals)	25	242
Ayurveda dispensaries	Government dispensaries	355	36	10	416
	NRHM dispensaries	75	6		
	Sub-centres	8	2		

Appendix 3.2

Deficiencies in buildings, basic amenities, furniture and equipment

(Reference: Paragraph 3.7.4; Page 41)

Sl. No.	Deficiencies	Institution-wise details of deficiencies
1	Remoteness of location	*DAH Valavannur* is situated in a hilly area, one kilometre away from main road and 25 kms from district headquarters. *GAD Irunilamcode, GAD Edakkara*
2	Lack of sign boards/name board	*GAD Harippad,* *NRHM Ayurveda Dispensary (NRHM AD) Tholikode,* *GAD Poojappura, GAD Karumady,* *GAD Thalavady, GAD Puzhakkal,* *GAD Purakkad and GAD Chettivilakom*
3	Buildings	
	a) Unsafe building	*GAH Irinjalakkuda* - Wards, two treatment rooms, a consultation room, a nursing room and eight paywards are functioning in a building declared as unsafe by PWD. *RVDAH Thrissur* - Sports unit ward is functioning in the 3rd floor of a building, for which occupancy certificate is pending from LSGD.
	b) Old/dilapidated building	*GAD Kanjiramkulam, RVDAH Thrissur* *GAD Thalavady, GAD Pullu and* *NRHM AD Punnapra*
	c) Leaking buildings	*DAH Valavannur, GAD Kanjiramkulam, GAD Melatur, GAD Vengara and NRHM AD Morayur* - leaking buildings *DAH Alappuzha* - Minor sutures were performed in the leaking room, walls of which found damp. *Government Panchakarma hospital, Alappuzha* and *GAH Thiruvali* - Wards were leaking *GAD Haripad* - cartons of medicines were found wet and instances of medicines damaging were noticed.
	d) Non-utilisation/ non-completion of buildings	*GAH Thiruvali* - Two storied building constructed at a cost of ₹40 lakh inaugurated in March 2014 was not put to use. *GARIM Kottakkal* - Construction of deluxe pay wards, isolation wards, staff quarters were not completed.
	e) Lack of space for therapy/ward	*Government Panchakarma hospital, Alappuzha*, the only Panchakarma speciality hospital under DISM, did not have any separate room for therapy. Space for therapy was provided by placing a partition in the corridor. Due to lack of space, cots were provided in verandah.

Sl. No.	Deficiencies	Institution-wise details of deficiencies
	f) Lack of ramp or lift	*DAH Alappuzha, GAH Punnapra, Government Ayurveda Marma Hospital, Kanjiramkulam* housed in two storey buildings without ramp or lift causing inconvenience to old/ailing patients. *GAD Choonda, GAD Pullu, GAH Thiruvali GAD Melattur, NRHM AD Morayur.*
	g) Defective/ inadequate cots/ beds	*DAH Alappuzha and GAPH Alappuzha* - Rusting cots and worn out beds. *GAH Nedumangad and RVDAH Thrissur* - Cots provided in Sports units were of the size as that in general ward, causing inconvenience to patients. CMO RVDAH Thrissur, stated that cots for sports-personnel should be of 7 feet length.
	h) Space constraints	*GAH Punnapra, DAH Thiruvali, GAH Guruvayoor, GAH Irinjalakkuda GAPH Alappuzha, GAD Poojappura, GAD Kanjiramkulam, GAD Karumady, GAD Choondal, GAD Kolazhy, Subcentre at Mulanjur, GAH Palode, GAD Malayinkeezh, NRHM AD Velur, NRHM AD Morayur*
4	Basic amenities	
	a) Lack of Toilet facilities	*GAD Choondal, GAD Poojappura, GAD Malayinkeezhu,GAD Melatur, GAD Mundathicode,GAD Purakkad,GAD Pullu GAD Thalavady,GAD Puzhakkal, GAD Kolazhy GAD Chettivilakom, GAD Nemom, GAD Karumady NRHM AD Othukungal*
	b) Lack of Drinking water facility	*GAD Kanjiramkulam, GAD Thalavady, GAD Kolazhy, GAD Puzhakkal, GAD Mundathikode, GAD Melatur,NRHM AD Othukungal, GAD Purakkad GAD Malayinkeezhu, GAD Poojappura, GAD Pullu, GAD Nemom, GAD Karumady GAD Karuvarakundu, GAD Irunilamkode*
	c) Lack of Electricity connection	*NRHM AD Tholicode NRHM AD Othukungal*
	d) Lack of Water connection	*NRHM AD Tholicode and GAD Thalavady*
5	Lack of laboratory facilities	*GAH Nedumangad* - Laboratory not started despite availability of equipment. *DAH Alappuzha* - Semi auto analyser is not functioning *RVDAH Thrissur* - The lab was not equipped with a microscope and hence, microscopic examinations were not conducted.

Sl. No.	Deficiencies	Institution-wise details of deficiencies
6	X-ray machine not put to use	*GAMH, Kanjiramkulam* - X ray Machine (30KW) not installed as room was not constructed. *GAH Palakkad* - X-ray machine supplied in 2009-10 not functioning.

Appendix 3.3

Non-availability/non-functioning/shortage of common equipment

(Reference: Paragraph 3.7.4; Page 41)

Sl. No.	Name of Hospitals/Dispensaries	Number of items not Available	Items not working	Shortage	List of the 39 equipment essentially required in Health care institutions
	THIRUVANANTHAPURAM				**(1) Weighing Machine** **(2) Stethoscope** **(3) Solar light** **(4) Solar water heater** **(5) Water Pump** **(6) Vacuum Cleaner** **(7) B. P Apparatus** **(8) Wheel Chair** **(9) Steel Utensils** **(10) Medicine Trolley** **(11) Scissors, forceps, etc.** **(12) Sterilizer** **(13) Stove** **(14) Water Purifier** **(15) Traction Set (manual)** **(16) Induction cooker** **(17) Separation Screen** **(18) ENT Set** **(19)Examination Table** **(20) X-ray viewer** **(21) Paathi (fibre)** **(22) Dhara stand (metal)** **(23) Steam Generator** **(24) Doctor's Chair** **(25) Table (Wood)** **(26) Almirah (metal)** **(27) Cot (teak wood)** **(28) Bed** **(29) Spinal bath** **(30) Medicine Rack** **(31) Chair** **(32) Torch** **(33) Thermo-meter** **(34) Tongue depressor** **(35) Kharala** **(36) Hammer** **(37) Doctor's Table** **(38) Patient's Stool** **(39) Foot Step**
1	GAH Nedumangad	25	0	25	
2	Marma Hospital Kanjiramkulam	15	0	15	
3	GAD Kanjiramkulam	30	1	31	
4	GAD Kalady	20	2	22	
5	GAD Karakulam	23	0	23	
6	NRHM AD Tholikode	30	0	30	
	ALAPPUZHA				
7	GAD Purakkad	28	1	29	
8	GAD Muhamma	21	0	21	
9	GAD Thalavady	25	0	25	
10	GAD Karumady	29	1	30	
	THRISSUR				
11	GAH Irinjalakuda	9	0	9	
12	RVDAH Thrissur	7	0	7	
13	Vish Vydya Hospital, Wadakkanchery	12	3	15	
14	GAD Choondal	28	0	28	
15	GAD Irunilamkode	26	0	26	
16	GAD Kandassamkadavu	29	0	29	
17	GAD Mundur	28	0	28	
18	GAD Pullu	24	0	24	
19	GAD Kolazhy	24	0	24	
20	GAD Puzhakkal	28	1	29	
21	GAD Mundathikode	26	0	26	
22	NRHM AD Velur	23	0	23	
	PALAKKAD				
23	GAH Palakkad	9	3	12	
24	GAD Akathethara	27	1	28	
25	GAD Malampuzha	27	0	27	
26	GAD Pudupariyaram	25	0	25	

Sl. No.	Name of Hospitals/Dispensaries	Number of items not Available	Items not working	Shortage	List of the 39 equipment essentially required in Health care institutions
27	GAD Nallepully	23	0	23	
28	GAD Kuzhalmannom	25	0	25	
29	GAD Pirayiri	27	1	28	
30	GAD Peruvemba	25	0	25	
31	GAD Kodumbu	27	0	27	
32	NRHM AD Parli	29	0	29	
33	Sub Centre Mulanjur	29	0	29	
	MALAPPURAM				
34	DAH Valavanur	11	0	11	
35	GAH Thiruvali	13	0	13	
36	GAD Vengara	21	0	21	
37	GAD Anakkaym	28	0	28	
38	GAD Edakkara	23	0	23	
39	GAD Karuvarakundu	29	1	30	
40	GAD Valluvambram	29	0	29	
41	GAD Melatur	31	0	31	
42	NRHM AD Morayur	24	1	25	
43	NRHM AD Othukkangal	23	1	24	

Appendix 3.4

Bed occupancy in the hospitals

(Reference: Paragraph 3.8.1; Page 43)

Sl. No.	Name of Institution	Sanctioned	Available	Average occupancy	*Per cent* of available against sanctioned	*Per cent* of occupancy against available
1	DAH Malappuram at Valavannur, Malappuram District	50	40	20	80	50
2	GAH Thiruvali, Malappuram District	10	10	6	100	60
3	GAH Palode, Thiruvananthapuram District	10	10	10	100	100
4	GAH Nedumangad, Thiruvananthapuram District	25	60	33	240	55
5	GAMH Kanjiramkulam, Thiruvananthapuram District	10	45	45	450	100
6	GAH Palakkad	50	50	34	100	68
7	DAH Alappuzha, Alappuzha District	50	50	41	100	82
8	GAH Punnapra, Alappuzha District	30	15	5	50	33
9	Panchakarma Hospital, Alappuzha, Alappuzha District	20	20	18	100	90
10	RVDAH Thrissur, Thrissur District	56	74	50	132	68
11	GAH Guruvayur, ThrissurDistrict	30	30	30	100	100
12	GAH Irinjalakuda, Thrissur District	30	26	18	87	69
13	GVVH Wadakkanchery, Thrissur District	4	4	5	100	125
14	GARIM Kottakkal	50	40	30	80	75

Appendix 3.5

Analysis of sanctioned staff strength with reference to average bed occupancy in test checked hospitals

(Reference: Paragraph 3.8.2; Page 43)

Name of institution	Average occupancy	Medical Officers				Pharmacist			Nurses		
		Requirement against average occupancy	Number sanctioned		Shortage(+)/excess (-) in General category	Requirement against average occupancy	Number sanctioned	Shortage(+)/excess (-)	Requirement against average occupancy	Number sanctioned	Shortage(+)/excess (-)
			General category	Speciality							
THIRUVANANTHAPURAM											
GAH Palode	10	1	1	0	0	1	1	0	2	2	0
GAH Nedumangad	33	3	2	2	1	2	1	1	5	2	3
GAMH Kanjiramkulam	45	3	2	0	1	2	1	1	5	2	3
ALAPPUZHA											
DAH Alappuzha	41	3	4	1	-1	2	2	0	5	8	-3
GAH Punnapra	5	1	2	0	-1	1	1	0	2	3	-1
Panchakarma Hospital, Alappuzha	18	1	1	0	0	1	1	0	2	2	0
THRISSUR											
RVDAH Thrissur	50	3	4	3	-1	2	2	0	8	7	1
GAH Guruvayur	30	3	3	0	0	2	2	0	5	5	0
GAH Irinjalakuda	18	1	3	1	-2	1	2	-1	2	4	-2
GVVH Wadakanchery	5	1	1	0	0	1	1	0	2	0	2
PALAKKAD											
DAH Palakkad	34	3	4	2	-1	2	2	0	5	8	-3
MALAPPURAM											
DAH Valavannur	20	3	2	0	1	1	2	-1	3	6	-3
GAH Thiruvali	6	1	1	0	0	1	1	0	2	2	0

Note: GARIM Kottakkal has not been reckoned since it is a research institution with different parameters

Appendix 4.1

FRIENDS Beneficiary Survey Questionnaire

(Reference: Paragraph 4.7; Page 69)

Name :

Sex and age : Male/Female 18-30/30-60/>60

Address/District :

Sl. No.	Questions	Answers
1	How often do you visit FRIENDS centre?	Twice a month or more Once a month Once in two months Once in three months or less
2	Generally how much time are you required to wait before the service is delivered to you?	Less than 5 minutes 5 to 15 minutes 15 to 30 minutes More than 30 minutes
3	Were there occasions you had to return without remitting bills because of long queue/network connectivity problems at centre? If so the range of delay:	Never Delay of 10 minutes or less per transaction Delay of 10 to 60 minutes per transaction Unavailability of connectivity for hours
4	Were there occasions when you went for remitting a bill, you were informed that the bill could not be remitted since the bill details were not available in the system and requested you to visit again later?	Never 3 times or less in a year 3 to 6 times a year More than 6 times a year
5	If the answer to the above question number 4 is affirmative, generally which are such bills?	KSEB BSNL Both KSEB & BSNL Others
6	Were there occasions when you remitted a bill at FRIENDS centre and the Department/Board levied fine on the ground that the receipt amount reached them late?	Never Once Twice More than twice
7	Have you come across errors in the receipt?	Never Once Twice More than twice
8	Do you have an internet connection at home?	Yes No
9	Will you prefer a facility for remitting utility bills through internet utilising net banking/credit card/debit card to the existing system of remitting cash at FRIENDS Centres?	Yes No
10	How do you rate the behaviour of counter staff?	Highly pleasing Pleasing Indifferent Rude
11	How do you rate the overall services delivered by FRIENDS	Very good Good Satisfactory Not satisfactory

Signature of Beneficiary

Appendix 4.2

Result of Beneficiary Survey

(Reference: Paragraph 4.7; Page 69)

Sl. No.	Description	Result
1	Number of participants	500 (100 each from Thiruvananthapuram, Ernakulam, Malappuram, Kozhikode and Kannur districts).
2	Districts surveyed	Thiruvananthapuram, Ernakulam, Malappuram, Kozhikode and Kannur
3	Representation of Male & Female	Male constituted 75 *per cent* and female were 25 *per cent*
4	Age class	The majority surveyed (55 *per cent*) was in the age group of 30 – 60. Senior citizens (Above 60 years) were 27 *per cent* and the remaining 18 *per cent* constituted the age group of 18 – 30.
5	Frequency of visiting FRIENDS	While 37 *per cent* visit FRIENDS Centres twice a month or more, 30 *per cent* visit once a month, 25 *per cent* visit once in two months and 8 *per cent* visit only four times a year or less.
6	Waiting time for service delivery	22 *per cent* people were of the opinion that they needed to wait only for 5 minutes or less. 14 *per cent* stated they had to wait upto 15 minutes. While 59 *per cent* stated they had to wait upto 30 minutes. The remaining 5 *per cent* had to wait above 30 minutes.
7	Network delay	16 *per cent* of the people were of the opinion that they did not face delay for remitting bills. The remaining 84 *per cent* experienced delay and had to return without remitting bills due to unavailability of connectivity.
8	Want of timely updating of billing data by participating agencies	73 *per cent* experienced absence of billing details in the system. Of the above, 89 *per cent* had problems with KSEB bills, 3 *per cent* with BSNL, 3 *per cent* with both KSEB and BSNL and 5 *per cent* had problem with other bills (Water bills).
9	Levying of penalty from consumers for late transfer of collection details to the respective agencies.	7 *per cent* had problems caused by delay in furnishing collection particulars by FRIENDS.
10	Errors in receipts	Only 3 *per cent* reported errors in receipts issued.
11	Home internet facility	48 *per cent* of the people surveyed had internet connectivity at home.
12	Provision for payment through the internet	While 14 *per cent* welcomed provision for payment through internet, 86 *per cent* wanted services through FRIENDS Centres.
13	Behaviour of counter staff	99 *per cent* rated the behaviour of counter staff as highly pleasing or pleasing.
14	Overall services by FRIENDS	68 *per cent* rated the overall services as very good or good.

Appendix 4.3

Details of variations in the average transactions per Centre per shift

(Reference: Paragraph 4.10.3; Page 76)

Sl. No.	FRIENDS Centres	Average No. of bills processed per Centre per shift	No. of existing Counters	Average No. of bills processed by the person, whose contribution was the lowest	Average No. of bills processed by the person, whose contribution was the highest
1	Thiruvananthapuram	753	13	53	131
2	Kollam	222	4	44	100
3	Pathanamthitta	162	6	14	52
4	Alappuza	183	7	24	64
5	Kottayam	177	4	22	73
6	Idukki	53	2	22	30
7	Ernakulam	445	6	37	136
8	Thrissur	379	6	64	98
9	Palakkad	347	7	20	76
10	Malappuram	245	6	39	80
11	Kozhikode	377	5	61	120
12	Waynad	47	3	14	29
13	Kannur	239	6	23	71
14	Kasaragod	191	4	35	71

Appendix 5.1

List of selected empanelled hospitals

(Reference: Paragraph 5.3.1; Page 105)

Sl. No.	Name of the hospital
1	Medical College, Thiruvananthapuram
2	SAT Hospital, Thiruvananthapuram
3	General Hospital, Thiruvananthapuram
4	Women and Children Hospital, Thiruvananthapuram
5	Taluk Headquarters Hospital, Chirayinkeezhu
6	Government Hospital, Palode
7	CHC, Vellarada
8	CHC, Kallara
9	District Hospital, Idukki
10	Taluk Headquarters Hospital, Adimali
11	PHC, Kattapana
12	Medical College, Kozhikode
13	General Hospital, Kozhikode
14	General Hospital, Koyilandi
15	CHC, Perambra
16	CHC, Koduvally
17	General Hospital, Kalpetta
18	Taluk Headquarters Hospital, Vythiri
19	District Hospital, Mananthavadi
20	Taluk Headquarters Hospital, Sulthan Batheri
21	CHC, Meenangadi

Appendix 5.2

Consolidated Statement: Penalty for Non-installation of Time of Day meter for the period 2010-11 to 2013-14[138]

(Reference: Paragraph 5.7; Page 121)

Sl. No.	Consumer No	Departments	Financial year				Total (in ₹)
			Penalty Amount collected by KSEB (in ₹)				
			2010-11	2011-12	2012-13	2013-14	
HEALTH AND FAMILY WELFARE DEPARTMENT							
1	1345170000605	GOVT. MEDICAL COLLEGE, TVPM	893770	885163	983648	1040351	3802932
2	1345170001466	GOVT. MEDICAL COLLEGE, TVPM	1279753	1303766	2118346	1781356	6483221
3	1345170001460	GOVT. MEDICAL COLLEGE, TVPM	1058153	1083138	637627	445313	3224231
4	1345170001462	GOVT. MEDICAL COLLEGE, TVPM	1068489	1095671	1986707	1601897	5752764
5	1366050004059	GOVT. MEDICAL COLLEGE, KOZHIKODE	341904	308543	378295	420004	1448746
6	1365950001731	GOVT. MEDICAL COLLEGE, KOZHIKODE	101700	101700	114460	118980	436840
7	1365950001732	GOVT. MEDICAL COLLEGE, KOZHIKODE	184679	217976	254062	308611	965328
8	1365950001734	GOVT. MEDICAL COLLEGE, KOZHIKODE	164366	168680	184159	228018	745223
9	1365950001726	GOVT. MEDICAL COLLEGE, KOZHIKODE	283852	421369	546576	627304	1879101
10	1355270001342	LEPROSY SANATORIUM, NOORANAD	314968	303868	375623	406731	1401190
TOTAL							**26139576**
HIGHER EDUCATION DEPARTMENT							
11	1355730000442	GOVT. POLYTECHNIC, KALAMASSERY	88792	114197	178871	171514	553374
12	1366040000621	GOVT. POLYTECHNIC, KOZHIKKODE	59163	63848	76465	94112	293588
13	1365350003268	GOVERNMENT PRESS, SHORNUR	166886	146297	185034	124326	622543
TOTAL							**1469505**
LABOUR AND SKILLS DEPARTMENT							
14	1365320001274	GOVT. ITI MALAMPUZHA	54067	45963	44163	47452	191645
15	1355330004124	GOVT. ITI CHENGANNUR	34200	34277	49634	51998	170109
16	1355730000570	GOVERNMENT ITI, KALAMASERRY	74375	73698	96471	110947	355491
17	1345640003140	ITI CHANDANATHOPE	57733	55452	60269	65324	238778
TOTAL							**956023**
GRAND TOTAL							**28565104**

[138] For consumers mentioned in Sl. No. 2, 3 and 4 the payment of penalty is up to November 2013