

**Prevention of HIV/AIDS in the World of Work: A Tripartite Response**

**Study Report  
on  
ECONOMIC IMPACT OF HIV/AIDS  
ON  
SINGARENI COLLIERIES COMPANY LIMITED (SCCL),  
Andhra Pradesh**

**A study undertaken by**

**International Labour Organization**

**in collaboration with**

**Andhra Pradesh State AIDS Control Society**

**and**

**SINGARENI COLLIERIES COMPANY LIMITED**

**November 2005, ILO Subregional Office, New Delhi**

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## ECONOMIC IMPACT OF HIV/AIDS on



**Singareni Collieries Company Limited, AP**

**A study undertaken by the ILO India Project**

**“Prevention of HIV/AIDS in the World of Work: A Tripartite Response”**

**in collaboration with  
Andhra Pradesh State AIDS Control Society  
and  
Singareni Collieries Company Limited, AP**

**Consultant & Writer : Dr.B.Gangaiah**

**Technical Editor : S.Mohd Afsar,**  
Technical Specialist (HIV/AIDS), South Asia &  
National Project Coordinator,  
ILO India HIV/AIDS Project,  
ILO Subregional Office, New Delhi

**Study Coordinator : Ravi Subbiah,**  
Programme Officer (Research & Documentation),  
ILO India HIV/AIDS Project,  
ILO Subregional Office, New Delhi

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## Acronyms

AIDS	:	Acquired Immune Deficiency Syndrome
ANC	:	Anti Natal Care
AP	:	Andhra Pradesh
APSACS	:	Andhra Pradesh State AIDS Control Society
BSS	:	Behavioural Surveillance Survey
CMPF	:	Coal Mine Provident Fund
FBIS	:	Family Benefit Insurance Scheme
FGD	:	Focus Group Discussion
HIV	:	Human Immuno-deficiency Virus
IEG	:	Institute of Economic Growth
KAP	:	Knowledge, Attitude and Practices
NACO	:	National AIDS Control Organization
NCWA	:	National Coal Wage Agreement
PLHA	:	People Living with HIV/AIDS
PMT	:	Project Management Team
PPTCT	:	Prevention of Parent to Child Transmission
SCCL	:	Singareni Collieries Company Limited
STI	:	Sexually Transmitted Infections
TAG	:	Technical Advisory Group
UNAIDS	:	Joint United Nations Programme on HIV/AIDS
USDOL	:	United States Department of Labor
VCCTC	:	Voluntary Confidential Counseling and Testing Centre

## Foreword

I am pleased to present the study on *Economic Impact of HIV/AIDS on Singareni Collieries Company Limited (SCCL), Andhra Pradesh*. This study, which is the first HIV/AIDS impact study on a mine company in India, has been undertaken by the ILO Project "Prevention of HIV/AIDS in the World of Work: A Tripartite Response". The ILO did not undertake this study in SCCL because SCCL was having a major HIV/AIDS problem in its workplace. Nor was there any evidence that the HIV prevalence in SCCL is higher than any other company in India. The ILO undertook this study in SCCL simply because SCCL, as a proactive employer, is engaged in HIV prevention efforts, and the ILO has provided technical support in their Master Trainers' Training programme on HIV/AIDS, in collaboration with the Andhra Pradesh State AIDS Control Society. The other consideration was that SCCL is located in one of the six states in India, which now have a generalized HIV epidemic.

HIV infection, by its very nature, takes years to show impact. Proper impact assessment is possible in countries having a high level of HIV prevalence. That is why we normally find impact related evidence emanating mainly from countries in sub-Saharan Africa, which are the worst affected by HIV/AIDS. Undertaking such a study in a low prevalence country like India was not easy. The impact of HIV/AIDS on enterprises is generally seen in terms of increased medical bills, a rise in absenteeism, compensation paid to employees declared unfit to work due to an advanced level of illnesses, employee replacement and retraining and other social security costs. The biggest challenge in documenting this impact was that most of the companies do not maintain separate records for HIV/AIDS, at least in the initial years. We also faced this challenge during the course of this study. To complement the data coming from the available records, the ILO undertook a Knowledge, Attitude, Practices survey among a selected sample of employees of SCCL. As a result, we now have a document that does present some indication of impact, but more than that makes a strong case for proactive action needed on part of Indian companies in preventing this epidemic.

Mining is highly labour intensive, draws a large number of migrant workers, and is associated with the risk of severe occupational illnesses such as silicosis,

pneumoconiosis, asbestosis, and tuberculosis. The link between tuberculosis and HIV infection is now well known. The presence of Sexually Transmitted Infections (STIs) found among mine workers due to high risk sexual behaviour also enhances their vulnerability to HIV infection.

The mining sector is a major sector in most national economies. In South Africa, experts believe that the industry hardest hit by HIV/AIDS will be mining. In Botswana, where diamonds account for 80% of export earnings and half of the government's total revenue, a third of the miners are estimated to be living with HIV. Similarly, copper accounts for 75% of the country's export earnings in Zambia and 18% of copper miners are estimated to be living with HIV. Throughout Southern Africa, the mining sector has been at the forefront of the efforts to fight HIV/AIDS. Companies, along with trade unions and employers' organizations, have played a major role in this effort by developing policies and programmes.

Coal is a dominant commercial fuel in India, satisfying more than half of India's energy demand. The coal mining sector in India employs nearly 600,000 workers, engaged primarily in public sector industries like the Coal India Limited (CIL) and its subsidiaries, SCCL and Neyvelli Lignite Corporation Ltd.

We hope that the stakeholders in the mining sector in India will find this study useful in developing their response to HIV/AIDS. This is very timely, as the country is poised to start the third phase of the National AIDS Control Programme (NACPIII). It is critical to build a multi sectoral response to HIV/AIDS in India. In this context, large sectors, such as mining, must make immediate efforts for mainstreaming HIV/AIDS in their programmes.

I would like to thank the management of SCCL and the Andhra Pradesh State AIDS Control Society for collaborating with the ILO in undertaking this study.

**Leyla Tegmo Reddy**

Director

ILO Subregional Office for South Asia &  
ILO Representative in India

## Acknowledgement

This study would not have been possible without the support of a number of individuals and organizations.

First of all, we would like to thank the SCCL management for their participation in the study, which reflects SCCL's commitment to fight HIV/AIDS. Throughout the study, SCCL provided full cooperation and showed a keen interest in sharing information/records and their experiences in implementing HIV/AIDS prevention programmes. We thank all the employees of SCCL who participated in the KAP study. Special thanks are due to Dr. K. Mukunda Rao, Chief of Medical Services, and Dr. K. Satyavara Prasad, Addl. Chief Medical Officer, SCCL, for their contribution at every stage of the study. Thanks are also due to Mr. G. Venkatanarayana of the Planning Cell and officials of Finance and HRD Divisions of the Corporate Office, Kothagudem, who provided the requested information, from time to time, to facilitate this study.

We would also like to thank Mrs. K. Damayanthi, Project Director, APSACS, who had first invited ILO to conduct the Master Trainers' Training Programme on HIV/AIDS for SCCL. That was the beginning of the SCCL-APSACS-ILO collaboration. The concept note of the study was finalized in consultation with APSACS and Mrs. Damayanthi facilitated discussions with SCCL. This led SCCL to nominate Dr. Satyavara Prasad as the nodal person, from SCCL, for participating in this study.

Very special thanks are due to Dr. B. Gangaiah, who was engaged by ILO as Consultant to conduct the study. He has done a remarkable job, working closely with the ILO, SCCL and APSACS in finalizing the research tools, collecting and analyzing information, guiding and orienting investigators, coordinating fieldwork for KAP study and in preparing the report.

Our thanks are also due to the members of the Technical Advisory Group (TAG) - Dr. Indrani Gupta, Professor and Head, Health Policy Research Unit, Institute of Economic Growth and Dr. P Salil, Joint Director, NACO. They provided invaluable suggestions in the concept note, research proposal and review of the draft report.

We would also like to thank Mr. Norman Jennings, Deputy Director, Sectoral Activities Department, ILO, Geneva, for sparing his time in reviewing the report and sharing his suggestions. We would also like to thank Mr. Behrouz Shahandeh, Project Manager, ILO/USDOL International Workplace Education Programme, ILO/AIDS, Geneva for his constant guidance, encouragement and support in the India project, including this research.

Dr. Sanjay Sahai deserves a special mention for designing the cover page of the report. Ms. Neelam Agnihotri, Publications Unit, ILO Subregional Office, New Delhi is thanked for her support and guidance in publication of this report.

Finally, I would like to thank my team members, particularly Mr. Ravi Subbiah, Programme Officer, Research and Documentation, ILO India HIV/AIDS Project, for conceptualizing, designing and coordinating the entire study. Ms. P. Joshila, Programme Officer (Training and Advocacy) of the ILO India Project is also thanked for her contribution to the study. Ms. Divya Verma and Ms. Seena Chatterjee played a key role in this publication by coordinating with the designer/printer and proof reading.

**S. Mohd. Afsar**

Technical Specialist (HIV/AIDS), South Asia  
and

National Project Coordinator,  
Prevention of HIV/AIDS in the World of Work: A Tripartite Response  
ILO Subregional Office, New Delhi

## Executive Summary

This study was commissioned by the International Labour Organization (ILO) India Project “Prevention of HIV/AIDS in the World of Work: A Tripartite Response” to understand the impact of HIV/AIDS on Singareni Collieries Company Limited (SCCL), Andhra Pradesh. According to the Andhra Pradesh State AIDS Control Society (APSACS), HIV prevalence in adult population in the state is above one percent in 18 districts and above two percent in seven districts of the state, which speaks of the severity of the situation. SCCL has a total manpower of 93,264. The Singareni coal reserves stretch over 550 kms., of Pranahita-Godavari Valley of Andhra Pradesh, covering the districts of Khammam, Adilabad, Karimnagar and Warangal.

SCCL is a joint enterprise of the Government of Andhra Pradesh and the Government of India. SCCL produces about 10 percent of the country’s coal production. Nearly 76 percent of SCCL production goes to the coal-based thermal power plants in Maharashtra, Andhra Pradesh and Karnataka.

The study aimed at:

- Assessing the vulnerability of SCCL employees to STI/HIV/AIDS.
- Assessing the impact of HIV/AIDS on SCCL in terms of:
  - a. Loss of production, if any
  - b. Medical expenses; and
  - c. Increased expenditure on employee replacement, in case of AIDS-related illnesses and deaths, if any
  - d. Any other expenditure incurred by SCCL in support of the employees infected and affected by HIV/AIDS.
- Assessing the future impact of HIV/AIDS on the company in the light of workers’ vulnerability and present trends.

The ILO Project team realized that though it may not be possible to capture data/evidence on all key impact-related indicators, the study would still provide useful information to strengthen the advocacy efforts to expand enterprise-based HIV/AIDS interventions in India. The idea of the study was approved by the PMT of

the ILO Project. As SCCL has a huge workforce; is located in a high HIV-prevalence state; and is already engaged in HIV/AIDS prevention efforts, the idea was discussed with SCCL and APSACS. The study was welcomed and Dr. K. Satyavara Prasad, Additional CMO, SCCL, was nominated the nodal person from SCCL for the study. The ILO, in consultation with APSACS and SCCL, finalized the research instruments. A Technical Advisory Group (TAG) was set up to oversee the research design/instruments and review the report. The methodology of the study consisted of: desk review of records available with SCCL; HIV/AIDS-related information available with APSACS; KAP study on a random sample of 500 to assess the vulnerability of SCCL employees; Focus Group Discussions (FGDs) and Key Informant Interviews.

The study revealed that data on all direct, indirect and systemic costs related to HIV/AIDS are not available but still there is evidence of rising costs due to HIV/AIDS, increased absenteeism and loss of manpower. A total of 29 persons were declared unfit, due to HIV/AIDS related illnesses, during the last five years by the SCCL Medical Board. SCCL had to spend a total of Rs. 65 lakhs (approx US\$ 144,444)<sup>1</sup> on disbursement of terminal benefits to these employees. This may constitute only three percent of the total number of employees declared unfit by the Medical Board for all the major diseases put together. However, the fact remains that this happened due to an illness that is preventable. Moreover, this expenditure was in addition to medical expenditure incurred by the Company for treating opportunistic infections and illnesses associated with HIV/AIDS. The company provides free medical treatment for all ailments, including opportunistic infections related to HIV/AIDS. SCCL spends an average of Rs 4000 (US\$ 89) per year per person/family in the normal case. In case of HIV-infected employees, this cost could increase substantially, depending on the health status of the infected person. Assuming that health care costs double, if not more, due to HIV, the direct health care cost to the company for 29 employees, prior to their being declared unfit, is at least Rs 2.32 lakhs (US\$ 5,155) per year. If they were provided this support for around eight years, this cost comes to Rs. 18.56 lakhs (US\$ 41,244). In addition to these direct costs, the Company would also have incurred indirect costs like loss of productivity due to increased absenteeism and reduced capacity to work of the infected employees, due to illnesses at a later date.

As per the available records at SCCL in mid 2005, a total of 311 employees were living with HIV/AIDS. According to APSACS, the ANC prevalence rates in four

<sup>1</sup> Conversion rate used is US\$ 1 = Rs.45

SCCL districts ranged between 0.75 to 2.0 percent, the state prevalence being 1.53 per cent. Key informants' interviews during the KAP survey indicated a slightly higher prevalence of around 2 percent among SCCL employees. Based on district-wise and state average prevalence rates, the total vulnerable population among SCCL mine workers is estimated at 1038 and 1184 respectively. Even if the lowest of these estimates are taken, it can be assumed that the company has at least 1038 employees living with HIV/AIDS.

#### Estimates of HIV Prevalence in SCCL

	ANC prevalence (percent), as per APSACS 2003-2004	Estimated number of employees living with HIV/AIDS
Adilabad	0.75 (32089)	240
Karimnagar	2.00 (23754)	475
Khammam	1.50 (15899)	238
Warangal	1.50 (5585)	85
<b>Total of four districts locations</b>		<b>1038</b>
<b>Based on State average prevalence</b>	1.53 (77409)	<b>1184</b>

Reported HIV infection in the company is found largely among the National Coal Wage Agreement (NCWA) wage workers though it cannot be inferred from this that the infection is absent among non-NCWA employees.

As far as future projection about the costs to company is concerned, the cost of treatment to current 311 employees would be approximately Rs.24.88 lakhs (US\$ 55,283) per year. For the minimum estimated 1038 employees, the cost would shoot up to a whopping Rs.83.04 lakhs (US\$ 184,514) per year.

If all 311 infected employees, currently recorded by SCCL, reach the stage of being unfit to work and are given compensation as per the SCCL rules, it will cost the company an amount of Rs.93.3 million (approx US\$ 2.1 million) in coming years. The key point to be emphasized here is that provision of Anti Retroviral Treatment to these employees for a period of ten years would cost the company much less - Rs.55.98 million (approx US\$ 1.24 million). And this will enhance the working

life of infected employees, reduce absenteeism, and also help them sustain their families.

The cost of supporting those medically unfit and later dying due to HIV/AIDS are estimated to be substantial for the company in coming years. The study projects that the total cost to the company on account of the currently reported 311 HIV infections is estimated at Rs.256.7 million (US\$ 5.70 million). In addition to this the cost to the insurance agency will also be substantial at Rs.45.7 million (US\$ 1.01 million). The cost to the Company would go up to Rs.856.4 million (US\$ 19.03 million) at the estimated 1038 infections and further to Rs.976.9 million (US\$ 21.70 million) at 1184 infections. For the insurance Companies this cost would go up to Rs.152.6 million (US\$ 3.39 million) and Rs.174.0 million (US\$ 3.86 million) respectively.

In addition to the above, the Company has to incur other direct costs like recruitment and training in case of replacement of the Staff/workers to continue the current levels of production. In the case of SCCL average cost of recruitment of an NCWA category worker is Rs.2000 (US\$ 44) per head and in case of Executive level employees the cost varies with minimum cost of Rs.1 lakh (US\$ 2,222) per recruitment.

If one assumes that all 311 infected NCWA workers are to be replaced through recruitment, this would cost the company Rs.6.22 lakhs (US\$ 13,822). Recruitment costs of the estimated 1038 and 1184 infected employees will be Rs.20.76 lakhs (US\$ 46,133) and 23.68 lakhs (US\$ 52,622) respectively. However these costs are not likely to be incurred by the company in the short run as there is surplus manpower in the Company at present.

Cost of replacement of executives and skilled technical manpower would be much higher.

In addition to these direct costs, the Company would also incur indirect costs like loss of productivity due to increased absenteeism and reduced capacity to work of the infected employees due to illness at a later date.

Total absence of each employee with paid leave in a year attributable to HIV infection is 75 days. In addition, it is assumed that the infected employee takes 30 percent of total working days as unpaid leave every year and the absence on account of this would be 90 days in a year. Thus the total absence on account of HIV infection could be 165 days in a year.

The loss of output to the Company for the estimated 165 days absence per employee would be in the range of Rs.38500 to 55000 (US\$ 855 to 1,222) in the wage

range of Rs.7000-10000 (US\$ 155 to 222) per month. In the case of 311 SCCL employees who are currently infected the loss of output on account of HIV for 165 days of absence could be in the range of Rs.119.73 to Rs.171.05 Lakhs (US\$ 0.26 – 0.38 million) respectively at Rs.7000 and Rs.10000 (US\$ 155 to 222) wage rate. This would add up to an output loss of Rs.598.65 to 855.25 lakhs (US\$ 1.3 to 1.9 million) over five year period due to HIV infection.

During the eight year period after infection the output loss could be in the range of Rs.954 to 1368 lakhs (US\$ 2.1 to 3.0 million). Other indirect costs like reduced capacity to work and cost of management time are difficult to estimate but will be substantial as the prevalence level rises.

Systemic costs like loss of workplace cohesion, decline in Workforce quality, Quality of employment cannot be quantified but the impact of these could be felt in the long run.

In view of these projections, the importance of prevention can hardly be overemphasized. The Company has initiated a number of measures for prevention of HIV among its employees. Prevention education is implemented in the company since 1998. Initial investment has been made and the infrastructure has been created by SCCL. KAP study brings out prevalence of STIs in the range of about 2-5 percent and low condom usage. Though awareness is high but there are gaps in knowledge, myths and misconceptions and discriminatory attitudes towards people living with HIV/AIDS, both within workplace as well as in community, that need to be addressed in an intensified HIV prevention effort.

For effective HIV/AIDS prevention management, care and support activities are essential. Two constraints in providing ART stated by the Company are resource constraints and lack of technical capacity. The study draws certain conclusions and makes some recommendations, which may be useful not only for SCCL but also for all big enterprises in India. These are:

- At present there is no clearly enunciated Workplace HIV/AIDS policy in the Company. In the absence of such a policy it is difficult to implement a comprehensive HIV/AIDS programme. The Company may work out such a policy following the ILO Code of Practice on HIV/AIDS and the world of work and the National HIV/AIDS policy framework.
- The Company may need to initiate necessary measures for care and support services in view of cost projections. It will certainly be much more economical to provide Anti Retroviral Treatment (ART) to infected employees to prolong their working life. SCCL can build up partnerships with APCACS, local NGOs like

the “Singareni Sewa Samithi”, and get its medical doctors trained in HIV case management.

- Effective implementation of prevention programme would rest on active participation of workers, unions, welfare/medical department and HRD/management. To ensure this and review the implementation of programme, the Company should consider setting up a representative committee on HIV/AIDS.
- Company needs to promote interpersonal education through Peer Educators for effective spread of awareness on HIV/AIDS. The key issue for the success of the programme would be capacity building of peer educators.
- At present PMTCT/VCTC facilities are not accessible to the company employees and their families. These services can either be provided through the Company hospitals or by setting up effective referral linkages with nearby government facilities.
- There is a need for prospective studies on STIs and HIV and systematic documentation and monitoring of the data on major diseases among employees in the Company.
- Condom access and education needs to be improved in the mining areas.
- Stigma and discrimination related to HIV/AIDS and myths related to the routes of transmission need to be addressed as the KAP Survey revealed that there are several myths and misconceptions about the HIV/AIDS among the employees.
- There is need for appointing Counselors at SCCL hospitals for providing counseling services on HIV and other health matters like alcoholism, occupational diseases etc.

## Introduction

This study was commissioned by the ILO India Project “Prevention of HIV/AIDS in the World of Work: A Tripartite Response”. The Project, being implemented with support from the U S Department of Labor (USDOL), aims at strengthening the world of work response to HIV/AIDS in India in collaboration with the Ministry of Labour and Employment (MOLE), National AIDS Control Organisation (NACO), employers’ and workers’ organizations, People Living with HIV/AIDS (PLHA) and Joint United Nations Programme on HIV/AIDS (UNAIDS). Based on the literature review on available research on the impact of HIV/AIDS in India and also the planned studies by NACO, it was realized that there is gap of evidence on impact of HIV/AIDS on enterprises in India. Hence, the purpose of the study was to capture evidence of present or future impact of HIV/AIDS on an enterprise with a view to strengthen advocacy efforts with enterprises in India.

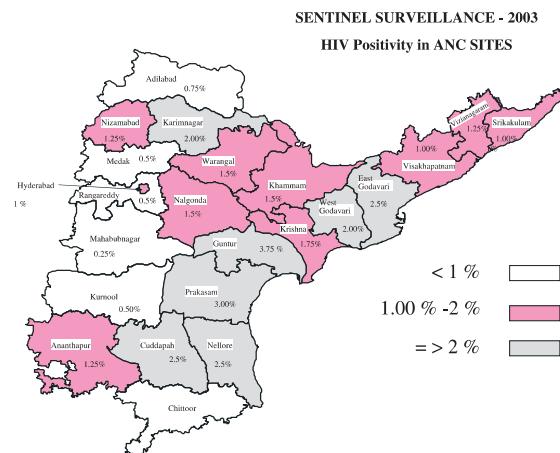
### HIV/AIDS Scenario in Andhra Pradesh

Andhra Pradesh (AP) is the fifth largest state in India in terms of both area and population. The state has 23 districts with a total population of 76.1 million accounting for nearly 8 percent of India’s population as per the 2001 census.

The state has seen a rapid industrial growth since the early 1960s. The state capital Hyderabad houses the fast-growing software industry, which is developing into a major centre for information technology in the country. The urbanization in the state is also is of the same level as that of the country (26 %). AP is one of the educationally backward states in India. The literacy rate among the population (age 7 and above) is 44 percent.

Andhra Pradesh is one of the six Indian states where HIV epidemic has reached the general population. HIV prevalence in adult population is above one percent in 18 districts and above two percent in 7 districts of the state. With above one percent prevalence in general population and above five percent among the high risk groups the state is ranked second in the high prevalent states.

HIV/AIDS poses a serious threat to the development of Andhra Pradesh. It is affecting the population in their most productive age. About 50 percent of the new



infections occur in the age group of 15 to 24 years. Taking the current prevalence into consideration, 45 percent of the infections are in the age group of 15-29 years. Nearly 90 percent of the infections are in the age group of 15-49.

HIV in AP is primarily a heterosexual driven epidemic i.e., nearly 90 percent of the infections occur through heterosexual mode of transmission. It is affecting women, children and other vulnerable groups adversely.

In addition to the structural factors like poverty and gender inequalities, culture and traditions several risk factors have been found to be responsible for the spread of the epidemic in the state. Some of the important findings from the research/surveys and Behavioural Surveillance Survey (BSS) conducted which have important implications for the HIV/AIDS in the state, are as follows:

1. About 1 in 5 men in the state report non- regular partner's sex.
2. Sexually transmitted infections are common: about seven percent in both male and female.
3. Condom use rates with non-regular partners are low - 25 percent.
4. Trafficking of the girls into sex trade is high.
5. Large migrant population within the state and outside destinations.
6. Vast network of national highways connecting the local population to the national level high-risk population like truckers, sex workers.

## Impact of HIV/AIDS on mines

The mining sector generally employs large workforce which lives around mines. Mines are located where the minerals are, meaning that mining communities often exist in areas which are remote and inhospitable. Most often the mining workers stay at sites far from population centers forcing them to live apart from their families for extended periods of time. Under these circumstances mine workers often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. As a result, a severe AIDS epidemic can seriously threaten mine production. Mining is often dangerous and occupational injuries and diseases as well as deaths are more common in mining than in other occupations.<sup>2</sup>

Migration often disrupts social support mechanisms and family structures. There is a link between migration, single-sex housing, and AIDS, but considering the existence of other diseases and injury, lack knowledge of HIV/AIDS, denial, and the stigma and discrimination associated with HIV/AIDS, workers' unions and management find it difficult to address the issue at the mines as effectively.<sup>3</sup>

Sexually Transmitted Infections (STIs) are important co-factors for the spread of HIV infection. Most often the prevalence of STIs has been found to be higher amongst mine workers than in the general population. Even if the mine workers get treated for STIs seldom their sexual partners are treated for infections causing re-infection. Mine workers who are incapacitated to work due to AIDS are medically retired and often return home to rural areas where care and support services are limited or non-existent. The workers, with their premature retirement, who lose their livelihood support also goes through increased impoverishment as result of HIV/AIDS.

## An introduction to SCCL

SCCL is a joint enterprise of Government of Andhra Pradesh and the Government of India. The equity capital is shared in the ratio of roughly 51:49 between Government of Andhra Pradesh and the Central Government respectively. The headquarters of the company is at Kothagudem in Andhra Pradesh. SCCL produces about 10 percent of the country's coal production and 76 percent of its production is dispatched to the coal based thermal power plants in Maharashtra, Andhra

<sup>2</sup> Bollinger, Lori and John Stover. 1999: The Economic Impact of AIDS. The Futures Group International, Glastonbury, CT

<sup>3</sup> Smart, Rose.—Mining Sector: AIDS BRIEF for sectoral planners and managers. USAID

Pradesh and Karnataka. Currently the Singareni Collieries has total manpower of 93264 (as on 31 June 2004).

The Singareni coal reserves stretch over 550 kms., of Pranahita-Godavari Valley of Andhra Pradesh, covering the districts of Khammam, Adilabad, Karimnagar and Warangal, with a proven geological reserves aggregating to a whopping 8091 million tones. Rough estimates indicate the company's reserves can easily outlast a century.

The company considers human resources as the major asset and top priority is given to improve the quality of life of its employees. Under the welfare schemes for its employees SCCL provides better housing, medical and educational facilities. Besides these, the company is also focusing on health related issues like malaria prevention, nutrition and sanitation, diabetes control, prevention of heart ailments and HIV/AIDS.

The company had spent nearly 3.20 percent of its net profits in providing medical and sanitation facilities to its employees in the year 2001-02. Though the increase in medical expenditure is due to occupational diseases, HIV/AIDS related opportunistic infections are also reported to be contributing to the increase in the company's health expenditure. The recurring expenditure on medical and sanitation which is Rs.461 million (US\$ 10.14 million) indicates an increase of 13 percent in 2001-02 compared to the previous year's expenditure (recurring Rs.405 million or US\$ 9 million).

Considering the fact that Andhra Pradesh falls in the high prevalent states of India for HIV/AIDS there is a fertile ground of its further spread amongst the workers of Singareni Collieries. Given the fact that the workers in the collieries are subject to long hours of work and receive a good remuneration, an assumption can be drawn that some of them might be indulging in high-risk sexual behaviour making them vulnerable to HIV/AIDS. As it is evident from the increased expenditure of the company on medical and sanitation, there is a likely hood that the infection is penetrating into the workforce of Singareni Collieries, which would increase expense burden of the company in terms of providing medical care and supporting the families that are affected by HIV/AIDS.

In this backdrop, the ILO-India HIV/AIDS project decided to undertake a study to assess the present and future impact of HIV/AIDS on Singareni Collieries Company Limited. A concept note was prepared and shared with SCCL, NACO and APSACS for their inputs and suggestions. The objectives of the study were as follows.

1. To assess the vulnerability of coal workers to STI/HIV/AIDS.
2. To assess the present impact of HIV/AIDS on SCCL in terms of:
  - a. Loss of Production, if any
  - b. Medical expenses; and
  - c. Increased expenditure on workers replacement, in case of AIDS related illnesses and deaths, if any
  - d. Expenditure and support of the infected if any in this context.
3. To assess the future impact of HIV/AIDS on the company in light of workers' Vulnerability and present trends.

## 2. Methodology

Methodology of the study consisted of:

**1. Desk Review of Reports** and other documents including medical records of the company were perused for obtaining the necessary information. Records consulted include Laboratory Register, Blood Bank Register, Corporate Medical Board Register, Ward Discharge Registers of Different Area and main Hospitals, Hospital-wise referrals to Corporate Hospitals, TB Registers, Hypertension and Diabetes Register, Employee Personal Records, Manway Attendance Register (Muster or Form E Register), Annual Reports of the Company.

**2. KAP Survey** among 500 workers (0.05 Percent of 1 lakh workers approx.) with the help of a structured questionnaire. Total sample of 500 workers was drawn from all the clusters of mines spread over in the four districts of Khammam, Warangal, Karimnagar, and Adilabad proportional to the category of Workers/ staff working at each site/region.

All mines of SCCL were covered under the survey. A list of category wise staff strength and mine wise was obtained from the Personnel Department of the Company. From each Mine, Department-wise number of persons on roll as on 30-9-2004 was taken into account and a random sample was generated depending on the staff strength of each mine. The number of persons to be selected from each mine was decided on the basis of employee strength of each mine and its contribution to the total staff of the company.(Quota Sample).Corporate office and executives at different levels were also covered as part of the sample.

**3. Focus Group Discussions** among the target population

Two focus group discussions were held at two important sites i.e. Ramagundam and Bhuplappalli mines.

**4. In-depth interviews** among key informants at different levels i.e. Management Personnel, HRD personnel, Medical personnel and representatives of the Labor unions were also held as part of the study. Thirty-one Key informant Interviews were conducted at the different sites.

### 5. Involvement of key stakeholders and setting up a TAG:

The study was commissioned with the approval of the Project Management Team (PMT) of the ILO India Project being implemented with support from the USDOL. The PMT is chaired by the Additional Secretary, Ministry Of Labour and Employment, GOI and has representation from the Employers' and Workers' organizations, PLHA, NACO, UNAIDS and ILO.

Representatives of NACO, APSACS, SCCL and experts were also involved in planning and execution of the study at various stages.

A Technical Advisory Group (TAG) was set up by ILO to guide the study and provide technical inputs. Following were the members of the TAG.

Dr. Indrani Gupta, Professor & Head, Health Policy Research Unit, Institute of Economic Growth (IEG)

Dr. P. Salil, Joint Director, NACO

Mr. S. Mohd. Afsar, Technical Specialist on HIV/AIDS, ILO

Dr. B. Gangaiah, Consultant for the Study

Mr. Ravi Subbiah, Programme Officer, Research, HIV/AIDS, ILO

The first TAG meeting took a serious note of the limitations of the study, particularly as regards to the unavailability of data on key impact related indicators. This was primarily because companies generally don't keep separate records for HIV/AIDS related illnesses or costs.

The TAG, therefore, emphasized on analysis of medical records and health expenses of previous three years, comparison of HIV related illnesses with other illnesses among the workers/staff of all categories, analysis of the BSS data available from APSACS, particularly about the four SCCL districts, and key informants interviews from SCCL, private doctors, Voluntary Confidential Counseling and Testing Centres (VCCTCs) and NGOs.

The field work of the study was completed between October 2004 and February 2005.

The draft report was shared with NACO, APSACS, TAG members and SCCL for their review and inputs. The second TAG meeting reviewed the suggestions and the draft report. Dr. K. Satyavara Prasad, Addl. Chief Medical Officer, SCCL was also invited to attend the second TAG meeting in order to ensure that SCCL perspectives are taken into account while finalizing the report.

### 3. Findings

#### i. Reported HIV/AIDS cases in the Company

As per the records furnished by SCCL, a total of 381 people were reported with HIV infection in last five years from 2000-2004. Out of this, 47 persons are dependents of employees and 23 are local civilians and partners of the employees who have availed the medical services of the SCCL. Therefore, at present, SCCL has 311 employees who are living with HIV/AIDS as per records.

The table 3.1 gives the breakup, area wise and year wise:

**Table 3.1**  
**AREA WISE DISTRIBUTION OF HIV CASES REPORTED AT LABORATORIES OF SCCL AREA HOSPITALS DURING THE YEARS FROM 2000 TO 2004**

Year	KGM	MNG	YLD	RGM	BHPL	BPA	RKP	MM	SRP	Total	% infected in total (93722)
2000	06 (19)	01 (3)	02 (6)	02 (6)	—	05 (16)	10 (31)	03 (9)	03 (9)	32	0.03
2001	08 (13)	04 (7)	03 (5)	33 (55)	01 (2)	05 (8)	03 (5)	02 (3)	01 (2)	60	0.06
2002	10 (14)	04 (6)	—	24 (34)	02 (3)	06 (9)	16 (23)	03 (4)	05 (7)	70	0.08
2003	11 (10)	11 (10)	02 (2)	38 (36)	10 (10)	02 (2)	09 (9)	05 (5)	17 (16)	105	0.12
2004	11 (10)	23 (20)	05 (5)	33 (29)	10 (9)	—	15 (13)	08 (7)	09 (8)	114	0.12
Total	46 (12)	43 (11)	12 (3)	130 (34)	23 (6)	18 (5)	53 (14)	21 (6)	34 (9)	381	0.40

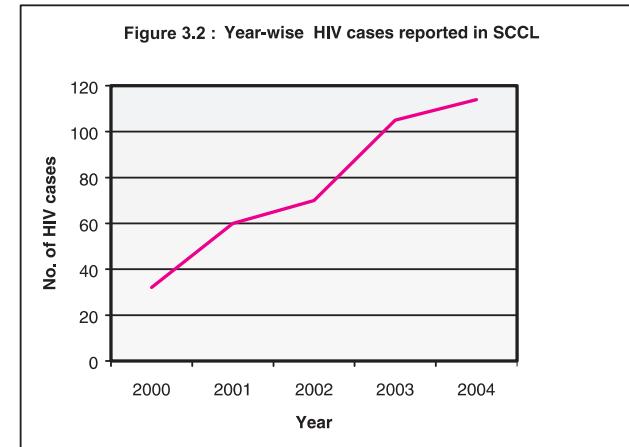
Note: Figures in brackets are percent in total

KGM: Kothagudem, MNG: Manuguru, YLD: Yellandu, RGM: Ramagundam

BHPL: Bhupalapally, BPA: Bellampalli RKP: Ramakrishnapuram, MM: Mandamarri SRP: Srirampur

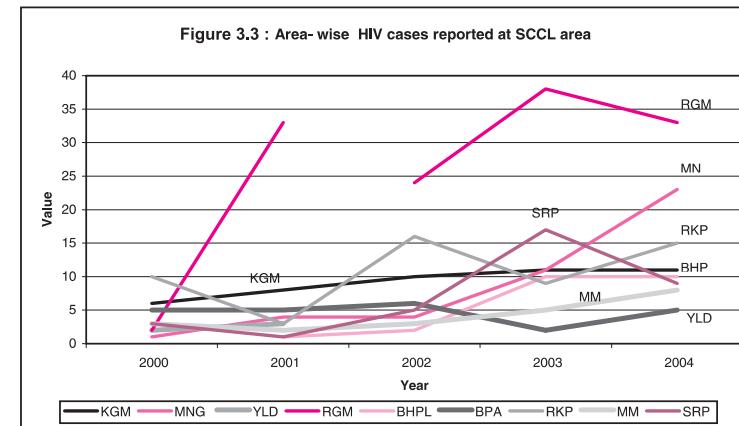
Source: SCCL Medical Records

The number of infected employees is constantly rising as is evident from the graph (figure 3.2).



Almost all the reported infections are among NCWA category of workers working in the surface and underground mining locations. However, this does not rule out the absence of HIV infection among the Non-NCWA category employees. Key informants indicated that possibly infected persons in this category have not reported at the company hospitals for keeping anonymity about their status.

Region-wise reporting of HIV infections in the SCCL is given in the graph (figure 3.3).



KGM-Kothagudem, MNG-Manuguru, YLD-Yellandu, RGM-Ramagundam, BHPL-Bhupalapally, BPA-Bellampalli, RKP-Ramakrishnapuram, MM-Mandamarri, SRP-Srirampur, Source SCCL

## ii. Estimated number of employees living with HIV/AIDS in SCCL:

An attempt was made to draw inferences based on the general prevalence levels recorded at respective district level (SCCL districts) as well as at the state level by the latest Anti Natal Care (ANC) surveillance data during the year 2003-2004, provided by APSACS.

HIV prevalence among the general population in the four SCCL districts (Adilabad, Karimnagar, Khammam and Warangal) ranged between 0.75 to 2.0 percent. The estimated state level prevalence was 1.53.

Based on these, the estimated number of employees living with HIV/AIDS in SCCL is depicted in the table number 3.4:

**Table 3.4**  
**Estimates of employees living with IV/AIDS in SCCL**

	ANC prevalence (%) Source: APSACS, 2003-2004	Estimated number of employees living with HI/AIDS, corresponding to the ANC prevalence rate
Adilabad	0.75 (32089)	240
Karimnagar	2.00 (23754)	475
Khammam	1.50 (15899)	238
Warangal	1.50 (5585)	85
<b>Total of four districts locations</b>		<b>1038</b>
<b>Based on State Average prevalence</b>	1.53 (77409)	<b>1184</b>

Note: Figures in brackets are the number of workers below 50 years of age in each district mining locations.

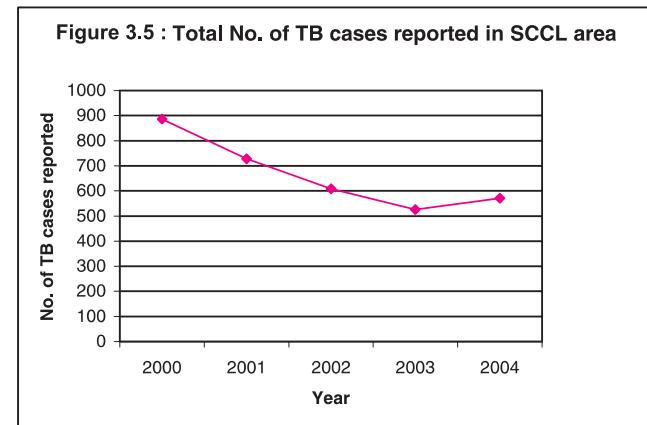
ANC prevalence data is taken as proxy for the general population, it can be assumed that the estimated prevalence of HIV among the SCCL employees would not be less than the prevalence rate for the general adult population, if not more. As district level prevalence rates are available for SCCL districts, the estimated number of employees living with HIV/AIDS have been worked out in the table 3.4.

This indicates an estimated 1038 employees living with HIV/AIDS in SCCL at present.

On the other hand if we assume prevalence level of 1.53 percent among the SCCL employees, the estimate would be higher at 1184.

During discussions with key informants in the KAP survey in different locations, estimates ranging from a low of 0.1 percent to a high of 4.0 percent prevalence were quoted. AIDS Sufferers HelpAge Association (ASHA), an NGO formed by some ex-employees of SCCL informed that they have assisted 600 HIV positive employees and their family members in the SCCL so far on care and support issues. Their estimate of the number of HIV infected in SCCL is 1500.

However, key informants also expressed the view that the rate of growth of HIV is on the decline due to the rising awareness levels. Tuberculosis (TB), which is the most common opportunistic infection associated with HIV, has also shown a decline among the Company employees. The graph depicting the progress of TB infection is presented in the figure 3.5 The marginal increase in the TB cases during 2004 can be attributed to the improved reporting system in the wake of HIV awareness programmes being implemented in the Company.



## iii. Prevalence of STIs among SCCL employees:

Data on STI prevalence is hard to get as there is no systematic collection of STI data in the company hospitals. Moreover, there is a general reluctance on the part of company employees for visiting the company hospitals for treatment of diseases like STI. Hence, private practitioners in the SCCL areas were also interviewed as key informants during the study.

Even in the private clinics and laboratories surveyed during the study, STI data is not kept systematically. Discussions with several private practitioners and other key informants revealed the following:

- STI prevalence in different locations visited was estimated to be ranging between 2-5 percent and in some locations like Ramagundam and Kothagudem the estimate may go up to 7-8 percent. This estimate is closer to the KAP survey data among the miners collected through the survey instruments.
- Prevalence of STIs is more among truckers and other transport operators who are visiting mining locations. Next major occupational group infected are agricultural laborers and other wage earners (coolies) from the nearby villages. Several key informants (private practitioners) revealed that the SCCL employees do not constitute a major proportion among the reported STI patients in their clinics. Most commonly reported STIs are genital warts, acute gonococcal urethritis and Herpes. One local Skin and STI specialist informed that 75% of the STI patients reported at his clinic are suffering from Herpes and most of the Herpes patients turned out to be HIV positive also. (Dr. Bhupati Rao, STI Specialist, Kothagudem).
- Reported STIs are on the decline for the last few years primarily due to HIV/AIDS awareness programmes being carried out in the state.

#### iv. Impact of HIV/AIDS on SCCL

Data on all direct, indirect and systemic costs related to HIV/AIDS are not available but still there is a clear evidence of rising costs due to HIV/AIDS.

SCCL has total employee strength of 93722 as on 30 March 2004. The study adopted the following model in outlining the costs of HIV to the company. In addition to the costs borne by the Company there are other costs of infection borne by the family and local community, which are not included in the calculation of the impact of HIV/AIDS. These costs cannot be quantified and expressed in mere economic terms but they are very substantial with long-term implications to the family and the society.

#### A. DIRECT COSTS

1. Benefits package
  - Health care
  - Health insurance
  - Pension fund

- Death benefit
- Funeral expenses

#### 2. Replacement

- Costs of advertising and interviewing
- Costs to productivity loss due to vacant posts
- Costs of retraining new employees

#### B. INDIRECT COSTS

##### 1. Absenteeism due to

- Sick leave
- Other leave (formal and informal) taken by sick employees
- Compassionate leave
- Attending funerals
- Leave to care for dependants with AIDS

##### 2. Sickness related production losses

- Reduced performance of individuals, due to HIV/AIDS sickness

##### 3. Management resources

- Managers' time and effort responding to workplace impacts

#### C. SYSTEMIC COSTS

##### 1. Loss of workplace cohesion

- Reduction in morale and motivation
- Disruption of schedules and work teams
- Breakdown of workplace discipline (unauthorized absences, theft)

##### 2. Workforce quality

- Reduction in average levels of skill, performance, institutional memory and experience of employees

##### 3. Quality of employment

- Cumulative costs reduce the quality of the workplace environment and reputation of the organization

*(Adapted from, Barnett, T. and Whiteside (2002) AIDS in the 21<sup>st</sup> Century: Disease and Globalization. Basingstoke, UK: Palgrave Macmillan)*

## A. DIRECT COSTS

### 1. Health care cost

Health care cost on account of HIV infection in SCCL is difficult to estimate as detailed data on expenditure on account of HIV and opportunistic infections is not maintained. However, the company meets all the health care costs of the employees either through its own hospital set up or through referrals to specialized hospitals in Hyderabad for which SCCL reimburses the costs of treatment, hospitalization and drugs as per the norms of the company. Medical and health expenditure in the company during the last three years is given in table 3.6.

**Table 3.6**

**Total Expenditure on Medical & Health Services in SCCL (Rs. Million)**

	2003-04	2002-03	2001-02
MEDICAL DEPT	2976	3080	2747
HEALTH DEPT	788	867	870
Total	3764	3947	3617

Medical and health department average expenditure for all diseases during the last three years is Rs. 38 crores (approx US\$ 8.44 million). The average per capita medical and health expenditure in SCCL during the last three years works out to Rs.4000 (US\$ 89).

In the absence of detailed data on health care costs for HIV, it can be assumed that the costs of health care would be double the per capita health care expenditure in the company though the actual costs may be more (or less). This would particularly be true in the later years of HIV infection. Hence, for the purpose of estimation, Rs. 8000 (US\$ 178) per year (twice the per capita cost) is taken as the cost to the company for treatment of HIV/AIDS related illnesses as per the present norms of SCCL, which does not include ART. The table 3.7 makes a projection of health care costs to the Company, both for the present reported HIV employees and their dependents and the estimated number of infected employees in coming years.

**Table 3.7**  
**Estimated Health care costs of HIV/AIDS on SCCL**

S. No.	No of HIV+ Employees	Per capita health care cost of Non-HIV employee	Per capita cost of health care due to HIV (assuming doubling of the per capita health care costs)	Total burden on the Company (in Rs Lakhs)	Total health care cost to company Over 8 year period (Rs. Lakhs)
1.	358 (Actual number of employees-311 and dependents-47)	Rs.4000	Rs.8000	28.64	229.12
2.	1038 (estimated)	Rs.4000	Rs.8000	83.04	664.32

As shown above the costs of health care due to HIV to the Company would be Rs.28.64 lakhs (approx US\$ 63,644) per year for the current 358 for infected employees and their dependents. This cost will increase as the disease progresses and the infected employees reach the stage of AIDS.

For an estimated 1038 infected employees, the annual costs for the company would be Rs.83.04 lakhs (US\$ 184,533). These costs will be borne by the Company over a period of time say, 5-8 years depending on the lifespan of the HIV infected after the infection.

Total costs of health care over an eight year period works out to be Rs.22.9 million (US\$ 503,800) for the currently reported 358 persons and Rs.66.4 million (approx US\$ 1,460,800 million) for the estimated 1038 persons.

### 2. Costs of being declared medically unfit

At present, HIV infected employee is extended the same health benefits as any other employee. This includes free treatment of opportunistic infections including the cost of drugs and hospitalization charges, normal leave applicable to the employees. However Anti-retroviral Treatment (ART) is not covered under medical treatment

services offered to SCCL workers/staff. In the case of the employees made unfit by the corporate medical board each employee is eligible for Monthly Monetary Compensation of Rs.3000 per month for the rest of his service period or a lump sum of Rs. 300,000/- (US\$ 6700) in each case.

In the case of death of an employee, the family is paid a financial package, which includes the following:

- i. A lump sum amount of Rs.300,000 (US\$ 6700) or Monthly Monetary compensation of Rs. 3000 (US\$ 67) per month to the spouse of the employee till he/she attains 60 years or death or remarriage, whichever is earlier.
- ii. Gratuity for the past and future service. Average gratuity paid to a general "mazdoor" or coal cutter would be around Rs.2.25 to 2.5 lakhs (US\$ 5000 – US\$ 5550) with a ceiling of Rs.3 Lakhs (about Rs.3 lakh for executives, [US\$ 6700])
- iii. Family Benefit Insurance (FBIS) up to Rs.10000 (US \$ 222) and contribution of the employee.
- iv. Janata Insurance (Group Insurance) averaging Rs.1 Lakh (US\$ 2222) incase of death due to non-mine accident.
- v. Coal Mine Provident Fund (CMPF) contributions made to the employees Provident Fund Account. (12% by employee + 12% by the Company)
- vi. Monthly pension as per rules.

As per the SCCL records, a total of 29 persons were declared unfit due to HIV/AIDS related illnesses during the last five years by the SCCL Medical Board. The company spent an amount of Rs. 65 lakhs (approx US\$ 144,444)<sup>4</sup> on disbursement of terminal benefits to these employees. This may constitute only three percent of the total number of employees declared unfit by the Medical Board for all the major diseases put together but the fact remains this happened due to an illness that is preventable. This is in addition to the medical expenditure incurred by the Company for treating opportunistic infections and other complications of the disease.

Information on progress from HIV to AIDS is not available so the costs incurred by the company in treating these 29 employees before they were declared unfit are not available. But based on the premise that SCCL would have spent Rs. 8000 per month ( double of per capita health care cost) for these 29 employees before

<sup>4</sup> Conversion rate used is US\$ 1 = Rs.45

they were declared unfit to work, SCCL would have incurred an estimated cost of Rs 2.32 lakhs (US\$ 5,155) per year. If they were provided this support for around eight years, this cost comes to Rs. 18.56 lakhs (US\$ 41,244).

The table 3.8 makes a projection of future costs to the company in different scenarios:

**Table: 3.8**  
**Direct Costs of HIV infection to SCCL**

	Unit Cost	Total Cost to Company for 311 currently Infected Employees (Rs. Lakhs)	Total Cost likely incase of 1038 infections* (Rs in Lakhs)	Likely Cost in case of 1184 infections** (Rs. Lakhs)
1. Lump sum Payment	Rs 3.0 Lakhs	933.0	3114.0	3552.0
2. Gratuity	Rs.2.5 Lakhs	778.0	2595.0	2960.0
3. Provident fund	Depends upon Employees' contributions	-	-	-
4. Family Benefit Insurance	Rs. 10000 (Cost to Insurance Company but premium paid by employee)	31.10	103.8	118.4
5. Group Insurance	Rs. 37000 (Cost to Insurance Company)	115.07	384.06	438.08
6. Janata Personal accident Insurance Policy (JPAIS)	Rs.100000 (Cost to Insurance Company)	311.0	1038.0	1184.0

7. Pension for life for the spouse and for two children	Rs.18000 per year (Average will be 1500 per month for about 15 years in case of a typical NCWA worker who dies at the age 45)	839.7 (18000x15yrs x311)	2802.6 (18000x15 yrsx1038)	3196.8 (18000x15 yrsx1184)
8. Funeral Expenses	Rs 5000	15.55	51.90	59.2
Total Cost to Company(1+2+7)	Rs 5.73 Lakhs	2566.25	8563.5	9768.8
Total Cost to Insurance Company (4+5+6)	Rs 1.47 lakhs	457.17	1525.86	1740.48

\* Estimated total number of infections based on the district level ANC prevalence rates.

\*\* Estimated total number of infections based on the state average ANC prevalence rate.

**Note:** Average age of HIV infected is taken as 37 years and it is assumed that infected person will be developing AIDS/death by the age of 45, hence 15 years of average service period is taken for the calculation of costs.

The cost of supporting those medically unfit and later dying due to HIV/AIDS are estimated to be substantial for the company in coming years. The total cost to the company on account of the currently reported 311 HIV infections is estimated at Rs.256.7 million (US\$ 5.70 million). In addition to this the cost to the insurance agency will also be substantial at Rs.45.7 million (US\$ 1.01 million). The cost to the Company would go up to Rs.856.4 million (US\$ 19.03 million) at the estimated 1038 infections and further to Rs.976.9 million (US\$ 21.70 million) at 1184 infections. For the insurance Companies this cost would go up to Rs.152.6 million (US\$ 3.39 million) and Rs.174.0 million (US\$ 3.86 million) respectively.

In addition to these there are other costs incurred by the family of the infected for nutrition, time of the family members for the care of the infected employee and foregone opportunities for additional income earnings for the family by the dependents who might be taking care of the infected employee or the spouse.

### 3. The cost of replacing employees

#### i. Costs of Recruitment

Replacement cost is another important cost to be borne by the company in case of HIV related deaths in the Company. In the case of SCCL there are two main categories of employees. These are National Coal Wage Board Agreement (NCWA) category and Non-NCWA employee category, who are mostly executive grade employees.

In the case of NCWA worker category (Monthly rated, daily rated, piece-rated, temporary) the recruitment is done through the Employment Exchange, whereas for the Non-NCWA category the recruitment is done through open competition based on advertisement and prescribed selection process.

In the case of NCWA categories no new recruitment is taking place in the recent years as the company has excess manpower. Any shortage in this category is filled through transfer from one region to another and also by promotion. There are large numbers of applicants for employment from the families of former employees who have died while on duty or due to disease and those medically declared unfit by the Company Medical Board.

Recruitment cost in this category through Employment Exchange is worked out as Rs.2000 (US \$ 45) per head by the HRD department of the company.

If the company had to replace all 311 HIV positive NCWA workers at some stage, the recruitment cost will be Rs. 6.22 lakhs (US \$ 13,822). Costs of replacement recruitment of estimated 1038 and 1184 infected employees respectively will be Rs.20.76 and 23.68 lakhs respectively (US\$ 46,129 and 52,622 respectively).

In the case on Non-NCWA category who are mainly technical and managerial level executives (E-1 to E-5, M-1 to M-3) the cost of each recruitment process is roughly Rs.1 lakh (US\$ 2,222) which includes advertisement, selection of candidates through tests and interviews etc. If more number are recruited at one time the per capita cost of recruitment will come down but this is unlikely as the recruitment to Non-NCWA category is generally not large in number.

#### ii. Training

The cost of training a new employee is another important cost to be incurred by the company in case of HIV infection and consequent disability/death of the employee. Every year SCCL spends substantial amounts on the training of its staff and workers.

The Company organizes training for approximately 30 to 35 thousand employees every year in all grades put together. Training costs are incurred both in the case of NCWA and Non-NCWA categories.

In the case of NCWA category of workers an introductory training of 8 days is given when recruited. Subsequently 6-8 weeks of induction training is given for all technical persons as per the statutory requirements. Subsequently these trainees are also given training on the assigned equipment/site. The Company incurs a per capita cost of approximately Rs.20000-40000 (US\$ 444 to 888) on induction including the salary paid during the period of training in case of NCWA category of workers. Once in five years they are also trained 12 days each under the refresher courses.

Thus, the initial cost of training for replacement of already infected employees (NCWA workers) will be in the range of Rs.62 to 124 lakhs (US\$ 0.14 million to 0.28 million). However, the company may not have to incur this cost as it claims to have excess manpower already on its rolls. But the cost can be substantial if the SCCL has to finally replace the minimum estimated 1038 HIV positive employees.

In the case of executives, the trainees are given an induction training of 180 days which costs the Company approximately Rs.1.5 lakhs (US\$ 3334) per head. On the job training of executives is also given every five years for all the executive grade employees, which costs Rs.60000 (US\$ 1334) per head. Some of the executives are also sent on trainings outside the Company to various locations within the and outside the Country. These trainings invariably cost higher than the costs indicated above.

### **iii. Costs of vacant posts to the productivity of the Company**

In the case of NCWA category employees the productivity loss due to vacant posts is expected to be low or negligible as the manpower in this categories is surplus and immediate replacement is available from within the roles of the company. However, the Company may need to bear the cost of retraining in the skilled and technical grades during the period of redeployment in the company. Surplus manpower is also generated every year due to mechanization and technology improvements in the mining operations, which also reduces the impact of the infection on the company. On the other hand the expansion of mining activities to new areas already identified may require new workers, which is likely to increase the demand for manpower with the company.

In the technical/managerial grades the cost of vacant posts may be high depending upon the level of skills required and the time required for filling up these posts. In the case of SCCL vacant posts in all categories can be quickly filled from the market since there is enough supply of qualified personnel for the purpose. Hence, the costs of such vacant posts will be marginal and short term in nature.

### **B.INDIRECT COSTS**

Indirect costs of HIV to the Company include: absenteeism by the infected and affected employees due to their own or their family member's illness; reduced capacity to perform their work while on duty; and management resources and time spent on the workplace to manage the problems of HIV infection in the Work Place.

At present, there is no documented data regarding the absenteeism of HIV infected employees. However, discussions with a few infected employees' families reveal that there is a tendency to use up all the eligible leaves for visits to hospitals, including outside hospitals, for various opportunistic infections and also for taking rest due to sickness. Members of the few infected families contacted also informed that employees also have to take leave to attend to the infected dependents, who need care and psychological comforting by the elders. Employee's economic burden has also increased substantially as the earning capacity of the infected members has come down and needs have increased. The Company would incur loss of production on account of absenteeism and reduced capacity to work.

An estimate of the loss of production on account of absenteeism due to HIV/AIDS related illnesses can be made on the following assumptions.

- Wage of the employee represents his/her contribution to the production of the Company
- Average age of the HIV infected is 37 years and they would be reaching the stage of AIDS by the age of 45.

In one year an NCWA worker is entitled to the following leave as per the Company rules,

- 11 days of Casual leave,
- 15 days Earned leave,
- 30 days sick leave (maximum of 120 days in Service),
- 20 days of half pay leave (Commutated to 10 days full pay leave).

Total leave eligible per year 66 days.

In case of HIV infected family an employee is likely to use all this 66 days of leave. In normal case the employee would have utilized 11 days casual leave plus 30% of the other eligible leave which is 16 days per year. However due to HIV he/she is using the balance 39 days of eligible paid leave. In addition he/she is likely to use substantial portion of six months of special leave permitted in entire service for major diseases like heart problem, TB, HIV etc. Assuming that this special leave is used by the HIV infected over five year period equally by which time he/she develops AIDS the annual leave on account of this would be another 36 days. Thus the total absence of the employee with paid leave in a year attributable to HIV infection would be 75 days.

In addition, the employee is likely to avail unpaid leave also due to illness and other care and support needs which may vary with the overall health condition. In the first few years the unpaid leave utilization may be less but slowly as the immunity levels decline and opportunistic infections increase this absence may increase. Assuming the employee takes 30 percent of total working days as unpaid leave every year the absence on account of unpaid leave by the HIV infected would be 90 days in a year. Thus the total absence on account of HIV infection could be 165 days in a year. This is a conservative estimate and this absence would be varying depending on the actual health condition of the infected employee which could be more with the development of AIDS manifestations.

As regards the loss of output to the Company on account of absenteeism attributable to HIV infection we take monthly the wage or average earnings of the worker in the coal mine as representing the value of his/her contribution to the output. Average monthly wage of an NCWA worker in the Company is in the range of Rs.7000-10000 (US\$ 155 - 222) per month. Thus the loss of output on account of absenteeism due to HIV by one NCWA worker for 30 days of absence is estimated between Rs.7000 to 10000 (US\$ 155 - 222) per month. Hence the loss of output to the Company for the estimated 165 days absence per employee would be in the range of Rs. 38500 to 55000 (US\$ 855 to 1222).

In the case of 311 SCCL employees who are currently infected the loss of output on account of HIV for 165 days of absence could be in the range of Rs. 119.73 to Rs 171.05 lakhs (US\$ 266,066 to 380,111) respectively at Rs. 7000 and Rs.10000 (US\$ 155 and 222) wage rate. This would add up to a total value of output loss of Rs.598.65 to 855.25 lakhs (US\$ 1.3 to 1,9 million) over five year period due to HIV infection. During the eight year period of life after infection

assumed in the calculations in this report the output loss could be Rs.9.54 to 13.68 crores (US\$ 2.1 million to 3 million).

The production loss due to absenteeism in case of executive or technically skilled employee would be much higher.

In addition, the Company will also suffer production losses due to reduced capacity of infected workers and their relocation to other jobs. Estimates on this account will be difficult to make but discussions with the management and staff revealed that several infected employees working in the underground mines had to be redeployed in less strenuous over ground jobs unrelated to their skills.

In addition to these costs, the Company management at different levels will also be spending their time and efforts in responding to the changing impact of the HIV at the work place. They will be spending part of their time and resources for taking care of the needs of the HIV infected in terms of their special health and hygiene conditions and the tensions that may arise due to the fears and apprehensions of the co-workers related to stigma and discrimination. These costs are difficult to quantify but are real and substantive in their impact.

### C. SYSTEMIC COSTS

In addition to direct and indirect costs, the Company would also face several other systemic costs which cannot be quantified and whose impact could be felt in the long run, affecting the quantity and quality of output as well as the image of the Company.

#### *i. Loss of workplace cohesion*

If the HIV prevalence becomes too high and large number of workers or their family members get affected then the morale of the workers will be adversely affected. Thus the systemic cohesion which is essential for the effective delivery of outputs will be adversely affected. If large number of infections occur among the workers it may also disrupt the work schedules and work teams. As SCCL has already taken up HIV prevention efforts, and is also serious about further strengthening it, this situation is not likely to occur in SCCL.

#### *ii. Workforce quality*

Workforce quality declines as the infection rates go up since experienced and skilled workers succumb to the infection and they are to be replaced. Quality generally suffers due to loss of skills and experience.

In the case of SCCL, this situation is also unlikely as the estimated level of infection is low, the Company has excess manpower at present and HIV/AIDS prevention programmes have been started.

### iii. Quality of employment/image of the company

If large number of employees gets infected over a period, there is a bearing on the quality of employment and overall image of enterprises. Skilled and well qualified people may be reluctant to join and consumers might start looking for more reputed and competitive suppliers.

This scenario is unlikely in the case of SCCL at the current levels of infection and the demand for the Company production is unlikely to be affected as there is a shortage of coal in the region and supply rather than demand for coal is determining factor of profits at present.

### D. HIV and other major diseases in SCCL

An analysis of the disease profile of the employees of SCCL puts heart related diseases at the top of the health care burden on the Company, followed by cerebral and vascular diseases, orthopedic and ophthalmic conditions.

Medical and health department average expenditure during the last three years is Rs.38 crores (US\$ 8.4 million). Data on employees declared medically unfit by the Medical board during 2002-2004 reveals that the maximum (229) employees were declared medically unfit on account of heart related diseases. This is 24 percent of the total. This is closely followed by 219 due to cerebral and vascular conditions (23%), 146 due to orthopedic problems (16%). A total of 29 employees declared unfit due to HIV/AIDS related illnesses accounts for 3 percent of the total.

Though the current share of HIV in the number of medically unfit cases is low (3%) this share may increase and the numbers could multiply as the latent infection surfaces and more and more infected employees develop AIDS and succumb to opportunistic infections.

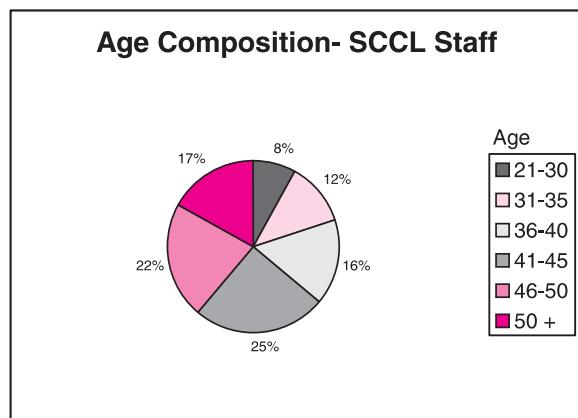
**Table 3.9**  
**SCCL employees declared unfit: disease-wise and year-wise**

Sl.No	Name of Disease	2000	2001	2002	2003	2004	Total
1	Heart Conditions	0	2	1	16	9	28
2	Coronary Artery Disease	24	41	27	52	38	182
3	Rheumatic Heart Disease	0	2	4	2	11	19
4	Cerebral Vascular Arrest	42	45	48	48	36	219
5	Orthopedic	9	27	46	25	39	146
6	Defective Vision 1	12	12	20	36	31	111
7	R.T.A.	4	11	10	12	11	48
8	Epilepsy	4	12	4	4	7	31
9	HIV Positive	0	4	6	13	2	25
10	End Stage of Renal disease	1	5	7	6	5	24
11	Pulmonary Tuberculosis	1	3	5	3	8	20
12	PT + HIV	0	0	0	0	4	4
13	Psychiatric Conditions	1	5	3	2	0	11
14	Cancer	3	3	0	7	5	18
15	Liver Conditions	0	1	1	2	3	7
16	Diabetes	1	5	1	3	1	11
17	Defective Hearing	0	1	1	3	4	9
18	Chronic Alcoholism	1	2	1	0	0	4
19	Leprosy	0	0	0	1	2	3
20	Burns	2	0	1	0	2	5
21	CNS	0	1	2	0	0	3
22	GI System	0	0	0	1	0	1
23	Others	0	1	1	1	5	8
TOTAL		105	183	189	237	223	937

## v. Knowledge, Attitude and Practices (KAP) Study Findings

There are 93264 employees working in the Company as on 30 June 2004. 69.98 percent are working in underground mines; 8.62 percent in open cast mines; and 21.4 percent in surface activities. Bellampalli and Ramagundam account for majority of the workforce (nearly 80% of the total).

Broadly the SCCL staff can be divided into National Coal Wage Board Agreement (NCWA) workers and Executives of different categories. NCWA employees have several categories like Monthly Rated, Daily rated, Piece Rated and temporary workers. Executives are categorized into E1 to E5 and M1 to M5 categories based on their pay scales. Out of the various categories of NCWA employees 20 percent are in the category of monthly paid and permanently recruited officers. Remaining 80 percent are employed in different categories like time rated, piece rated, and "Badli<sup>5</sup>" Fillers and "Badli" Workers mainly working in the direct mining activity.



Nearly 83 percent of the workers are in the sexually active age group of 20-50 years and majority of 99.4 percent of them are males with females constituting only 0.6 percent. Females are mostly working as support staff in medical and welfare departments.

White-collar workers constitute about 20 percent of the staff with the rest working as blue-collar workers. Mean age of male workers is 40 years. Mean age of female workers is 42 years.

<sup>5</sup> Temporary workers available for replacements of regular workers

Vulnerability of SCCL employees was assessed on the basis of replies of the 500 employees surveyed through a structured questionnaire during the KAP survey. Various parameters like age, marital status, migration status, knowledge on HIV, self reported sexual behavior and practices like condom use, treatment seeking behaviour for STIs and other illnesses, overall socio-cultural practices in the vicinity of the living and working areas were explored during the survey.

### Following are the major findings from the survey:

#### 1. Profile of employees covered during KAP

Nearly 23 percent of the workers were illiterate and another 14 percent were functionally literate but had never attended any formal schooling. About 50 percent of them had attended some formal education and 6 percent attended technical courses. Some 7 percent of the surveyed employees had studied up to graduation.

The majority of employees were in sexually active age group of 21-45 years with fairly good income levels.

Nearly 79 percent reported to have migrated from rural areas. 43 percent had come from the same district where they are working while 29 percent had come from the adjacent districts. Only one percent surveyed has stated to come from the neighboring state.

Ninety nine percent of the workers surveyed are staying with their families near their work place. Those who go out on work go for short periods. In some areas where new mines have been opened recently the company has not made accommodation available and large numbers are staying single (i.e. Bhupalapally)

Nearly 40 percent reported that their main leisure time activity was watching TV or listening to radio. Around 14 percent reported to have been engaged in drinking alcohol. The other leisure time activities mentioned were: visiting friends, reading and religious activities.

#### ii. Awareness about HIV/AIDS

Awareness about HIV/AIDS among the Company employees is high as nearly 99.7 percent have heard of HIV/AIDS. Nearly 95 percent of those surveyed thought HIV could be prevented. More than 95 percent of those surveyed knew the principal modes of HIV transmission.

Regarding the sources of information, nearly 93 percent reported that health education staff approached them for HIV/AIDS awareness. Nearly 6 percent

reported that they have not been exposed to health education. Nineteen percent of the respondents stated TV as their source of information, while 16 percent reported to have received awareness through the events organized by the Company.

Though awareness about HIV/AIDS is high, there seem to be gaps in knowledge as the KAP brought out the following myths and misconceptions:

- Seven percent of those surveyed felt AIDS could be cured. Four percent stated that there was a medicine for cure of HIV.
- Eighteen percent said that one could get HIV by working next to those infected.
- Nearly 20 percent thought they could get infected by sharing a meal with a HIV infected person.
- Nearly 58 percent felt they could get HIV through mosquito bite.

### iii. Perception of self at risk

The risk perception to HIV/AIDS seems to be very low as 95 percent felt they were not at the risk of HIV infection. Only two percent thought they were at the risk of HIV infection and three percent said they did not know. This means awareness programmes need to go a step further and enhance the risk perception of individuals.

### iv. HIV testing facility

Only 44 percent of the workers surveyed were aware of the HIV testing facility near their work/residential location. Seventy five percent of the surveyed workers felt that if the testing facility was located in their vicinity and ensured confidentiality, they would access it.

### v. Knowledge of HIV infection or death in their vicinity

Some 37 percent of the surveyed informed that they had seen an AIDS death in their vicinity and 62 percent have known someone infected with HIV. This shows the severity of the epidemic the state.

### vi. Extent of discriminatory attitudes towards People Living With HIV/AIDS:

- Twenty five percent of the respondents mentioned that the community will not allow HIV positive person to stay in the village/locality. 22 percent felt HIV

positive person will not be accepted by their families. 42 percent felt HIV infected person should not be treated along with the general patients.

- Some 38 percent of the surveyed workers are not ready to share food with the HIV infected
- Seventy three percent of the respondents felt that the HIV positive workers need to inform their status to others.
- Twenty nine percent respondents were not comfortable shaking hands with HIV infected colleagues.
- Twenty six percent respondents were not in favour of sharing their work tools with HIV positive colleague.
- Thirty seven percent of the workers surveyed were not ready to share toilets used by their HIV infected colleagues.
- Twenty five percent of those surveyed were not ready to travel in same vehicles as their HIV positive colleagues.
- Though a majority (72 percent) of the workers would like their infected colleagues to continue working, 26 percent would like them to retire from work.

### vii. Knowledge and use of Condom

Ninety nine percent of the workers were married and had heard of or seen a condom. Some 48 percent perceived condom useful for HIV prevention while 28 percent view it mainly as a family planning method. Nearly 21 percent view condom as an accessory to prevent STIs and two percent viewed it as sexual pleasure accessory. Ninety three percent of those surveyed know where condoms were available. Ninety two percent of the surveyed workers felt that condom could be effective in preventing HIV infection if used correctly and consistently. However, this awareness has not translated into behaviour as is evident from the following:

- However, only 16 percent of those surveyed reported use of condom. Of these, 86 percent used it to avoid pregnancy; 6 percent to avoid giving disease to their partner; 7 percent for protecting themselves from infections; and 1 percent due to pressure from their partner.
- Even the limited number who reported use of condom, were not using consistently. As high as 74 percent of the condom users reported non-use of

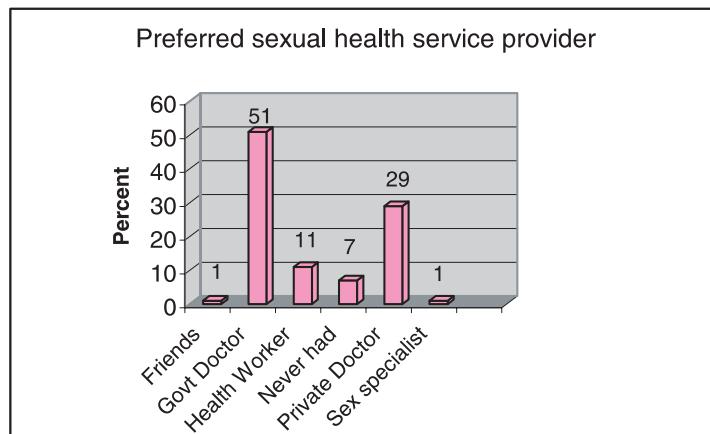
condom in their last sexual encounter. Only two percent reported consistent condom use with their regular sex partner.

### viii. Knowledge and practices related to STIs

- Twenty eight percent of the respondents surveyed could not tell any of the symptoms of STIs, while others were able to tell at least symptoms of one or two STIs.
- Two-five percent of those interviewed reported to have symptoms related to STIs.
- More than 90 percent reported that they would seek treatment from a clinic or a hospital for complaints related to STIs. However, only 49 percent of the workers surveyed expressed comfort in visiting an STI clinic. Only one percent reported that they would get drugs from medical shops for treatment.
- Nearly 32 percent of those interviewed have considered condom as barrier for protection against STIs, whereas 23 percent felt faithfulness to a single partner was a sure way of protection. Nineteen percent felt avoiding casual sex was a good way of protection from STIs.
- Nearly 23 percent had no knowledge about the link between STIs and HIV.

### ix. Health seeking behaviour

KAP survey revealed some interesting trends regarding the health-seeking behaviour of the SCCL employees. For minor ailments, 33 percent of the workers visit a private clinic, 39 percent go to the company clinic and 19 percent visit a government facility, four percent of the surveyed also revealed their preference for trained health worker.



For sexual health services, 51 percent reported that they visit a government hospital, 29 percent a private doctor and 11 percent a health worker. It is evident that for personal problems like STIs, the employees don't seem to go to their company hospitals.

As regards the treatment compliance 85 percent have responded saying that they take full course of medicine, while 13 percent said they do not take full course of medicine.

### x. High risk behavior among employees

Only two percent of the respondents stated to have engaged in sexual relationship with non-regular partner in the last one year. Some eight members out of the total sample of 491 male workers surveyed have reported sexual relationship with a sex worker.

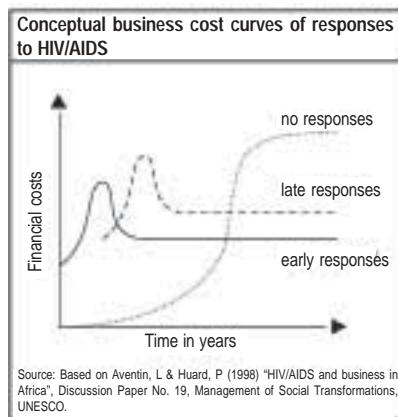
Of the 7 persons who engaged themselves in sex with non-regular partner, 5 persons never used condoms and 2 reported condom use sometimes. Nearly 14 percent reported to have been engaged in drinking alcohol. As the miners are relatively better off in terms of earnings, high level of alcoholism is increasing their vulnerability to STIs/HIV. Discussions with the workers revealed that due to harsh conditions of mining particularly in underground mining large number of the mining workers consume alcohol after the duty and occasionally visit the sex workers in the area. Some have also mentioned the practice of Men Having Sex with Men (MSM) among them. As condom use among the employees is low, they are vulnerable to the HIV infection and other STIs.

## 4. The importance of HIV prevention programmes at enterprise level-SCCL efforts:

In view of the costs and adverse impact of HIV infection on the Company the importance of prevention can hardly be overemphasized. These costs are not limited to the Company alone. Substantial additional costs, both social and economical will also have to be borne by the families and the surrounding communities.

In the absence of a cure for HIV/AIDS and unavailability of a vaccine, prevention of HIV/AIDS happens to be the best option for any company. The experience of HIV/AIDS epidemic over the years has shown that prevention programmes have worked. And, prevention programmes work best when started early. At workplaces, a large number of people come together. They can certainly be given HIV/AIDS education at workplaces. Businesses don't work in isolation. They are connected to communities. So, there is every rationale - social as well as economical-for enterprises to take action against HIV/AIDS.

The diagram in figure 4.1 depicts the conceptual business costs of early response, late response and no response by a company.



An early response will reduce the infection and limit the business costs while a late response will push up prevalence levels increasing the costs to companies. Lack of response will further push up the prevalence adding substantially to the costs.

The estimated per capita medical and health expenditure in SCCL (excluding ART) on employees living with HIV/AIDS is Rs. 8000 (US\$ 177) per year, whereas the per capita expenditure on HIV prevention during the last five years in the Company works out to Rs.19.6 (US\$ 0.43) only.

The SCCL initiated HIV prevention programmes for employees in 1998 with initiative from a few staff members in the medical and health department. Top management and mine level functionaries extended necessary cooperation and support. SCCL also received technical support from APSACS and ILO in Master trainers' training programme on HIV/AIDS.

Between 2002-2004, the SCCL conducted 889 awareness programmes covering 133531 employees (including repeat coverage). However, the feedback from the KAP survey reveals that the quality of awareness particularly with reference to several myths and misconceptions needs to be improved for reducing the risk behaviour.

**Table 4.1**  
**HIV/AIDS awareness programmes and coverage**  
**during 2002-2004**

Particulars	Year	Areas							Total	
		KGM	MNG	YLD	RGM	BPA	RKP	MM	SRP	
a) No. of HIV/AIDS programmes organized	2002	4	2	2	2	2	128	219	8	367
	2003	4	3	2	2	2	77	216	13	319
	2004	4	3	2	2	2	85	77	8	183
	Total	12	8	6	6	6	290	512	29	889
b) No. of employees covered	2002	2157	800	500	1232	2900	14953	14462	8860	45864
	2003	1402	800	500	5783	3000	6717	9269	7550	35021
	2004	1848	800	500	6175	7000	18071	10432	7820	52646
	Total	5407	2400	1500	13190	12900	39741	34163	24230	133531

Table 4.2

## PARTICULARS OF EXPENDITURE INCURRED (Amt. in Rs.)

Sl. No	Items & Equipment	2000-01	2001-02	2002-03	2003-04	2004-05	Total
01	Sodium Hypochlorite 4%	118125	99400	120950	179950	179950	698375
02	Elisa Readers for Blood Bank	490000	0	0	0	0	490000
03	Well washers (Micro Elisa)	320000	0	0	0	0	320000
04	Blood Bank Refrigerators	0	0	980200	0	0	980200
05	Disposable HIV kits	0	10000	30000	121875	121875	283750
06	Syringe tip & Needle cutters	16500	0	0	52440	0	68940
07	Laboratory Consumables	242270	128250	44500	370772	385386	1171178
08	Blood Bank equipment (weigher, sealers cutters, AI rings etc.)	0	0	0	689000	0	689000
09	Disposable syringes & needles	46517	200000	629886	629886	629886	2136175
10	Biodegradable polythene covers & bins	0	454050	552146	552146	552146	2110488
11	Disposable gloves	0	0	3300	3300	3300	9900
12	Health Education Material	42000	43500	43800	45600	46000	220900
13	Total	1275412	935200	2404782	2644969	1918543	9178906

During the last five years, the company incurred an approximate expenditure of Rs. 91.78 lakhs (US\$ 203,935) towards prevention of HIV. Primarily this includes expenditure on infrastructure items like laboratory equipment and consumables for testing in the blood banks as well as the expenditure on health education. Cumulative cost incurred during the last five years on health education material is Rs. 220900 (US\$ 4908). As the necessary infrastructure is created in the company scaling up cost of prevention efforts will be low in future. Moreover SCCL has wide network of infrastructure and staff meant for welfare of the mineworkers, which can be effectively galvanized for the conduct of prevention education activities.

**Care and support activities:**

At present, the Company provides treatment of opportunistic infections. VCCTC facilities are available at Government Hospital at Kothagudem and other district hospitals but these are not easily accessible to mine workers in all the mines.

Anti-Retroviral Treatment (ART) is not extended by the Company to its employees at present. Two constraints for not starting the ART stated by the Company are resource constraints and lack of technical capacity. As the prevention and care are closely linked and mutually reinforcing, ART needs to be initiated as it will prolong the life of infected employees, and would turn out to be cost effective in the long run.

## 5. Conclusions and Recommendations

Costs of HIV to SCCL are already substantial, even if calculated only on the basis of reported infections. The costs of supporting estimated number of infected employees and their dependents, even at the most conservative estimates, are huge. These costs are likely to go up as the infection spreads further and the prevalence levels go up.

Key conclusions that can be drawn from the SCCL case study, which enterprises need to take note of, are as follows:

- There is a strong case for action against HIV/AIDS at the enterprise level - both social as well as economical.
- The HIV/AIDS costs remain hidden for years and enterprises may not realize as they don't keep separate records for HIV/AIDS. This highlights the need for monitoring and documentation of health records at the enterprise level.
- Recorded HIV cases at the enterprise level will always be less than the actual or even estimated numbers as HIV infection does not show immediate/ exclusive symptoms for years; stigma and discrimination associated with HIV/AIDS keeps people away from seeking information and services, and due to very personal nature of STI/HIV infections, people generally go to outside facilities, rather than coming to the company facilities/hospitals.
- Early prevention helps. This is best done through internal people in order to integrate HIV/AIDS into the ongoing welfare programme for employees.
- Enterprises must seek technical support from expert agencies to help them start their HIV/AIDS response.
- KAP survey provides useful insights into the programme. The quality of prevention programme is the key in order to address gaps in knowledge, enhance risk perception of individuals and develop non-discriminatory attitudes towards people living with HIV/AIDS.
- A comprehensive response at the enterprise level means both prevention as well as care and support of those infected and affected. Provision of ART to

infected employees is cost effective rather than paying huge sums in compensation to infected employees when they die or lose their capacity to work. For example, If all 311 infected employees, currently recorded by SCCL, reach the stage of being unfit to work and are given compensation as per the SCCL rules, it will cost the company an amount of Rs. 93.3 million (approx US\$ 2.1 million) in coming years. Provision of Anti Retroviral Treatment to these employees for a period of ten years would cost the company much less - Rs.55.98 million (approx US\$ 1.24 million). And this will enhance the working life of infected employees, reduce absenteeism, and also help them sustain their families.

- Enterprises need to define their policy on HIV/AIDS to guide their response.

SCCL has a strong tradition of taking care of the welfare of its employees. As part of this tradition the Company has taken up HIV/AIDS awareness since 1998. As a result the awareness on HIV/AIDS among its employees is fairly high. However, as indicated by the findings of KAP survey, the quality of awareness programmes needs to be improved.

Having built initial awareness, the focus of SCCL efforts should be:

- a. To enhance the risk perception to STIs/HIV
- b. To provide correct knowledge about STIs/HIV/AIDS and dispel prevailing myths and misconceptions.
- c. To enhance health seeking behaviour
- d. To develop positive and non-discriminatory attitudes towards people living with HIV/AIDS.
- e. To enhance access and usage of condoms in mines.

SCCL is incurring substantial costs on health services for its employees. In order to avoid escalation of these costs in future, the Company needs to intensify its efforts. Following recommendations are made to SCCL on the basis of this study:

- At present there is no clearly enunciated Work Place HIV/AIDS policy in the Company. In the absence of such a policy it is difficult to implement a comprehensive response to HIV/AIDS. The Company may develop its policy, through an internal committee, following the recommendations of the ILO Code Of Practice on HIV/AIDS and World of Work and the National HIV/AIDS Policy framework.

- The Company should consider providing ART to infected employees by building effective partnerships with relevant agencies, particularly with APSACS, for building its technical capacity. In addition, the Company needs to initiate services like counseling and rehabilitation assistance of the dependents. The Company may collaborate with local NGOs like Singareni Sewa Samithi who have expertise in these services.
- There is a need for sensitization and training programmes for different levels including top and middle level management, unions, doctors etc. for ensuring a comprehensive programme at SCCL. This will also create an enabling environment for implementation of policy and programmes.
- Interpersonal education needs to be intensified in the company to raise the quality of awareness and dispel several myths and misconceptions. Wide network of infrastructure and personnel of welfare and health departments can be utilized for the purpose.
- More systematic documentation of medical information including maintenance of records and recording of data needs to be given priority by the medical department for review and monitoring the diseases and planning preventive and care and support services in the Company. Particularly, collection of STI data- types of STIs and other related illnesses like TB needs to be initiated in the Company hospitals.
- At present PMTCT/VCCTC facilities are not accessible to the company employees and their families. These may be extended through company facilities. Appropriate linkages could be developed with State AIDS Control Society and other agencies for this purpose.
- Medical staff/Welfare officers can be the key points for facilitating the HIV prevention work and extending care and support services. Their capacities need to be built to carry out long-term health education and other prevention and care services.
- Condom access and awareness on the use of condoms needs to be improved in the mining areas and supply of condoms must be monitored regularly.
- Staff capacity building needs to be given priority particularly in nodal departments like Medical and Welfare. All welfare officers should be given training on HIV/AIDS so that they can serve as focal points for information and awareness on HIV/ AIDS.

- There is need for specialized counselor at health facility/hospital who will extend counseling services on HIV and other health matters like alcoholism, occupational diseases etc. A Clinical Psychologist may be appointed.
- In the newly opened mining areas (Bhupalapally etc) there is an acute shortage of housing facilities. As a result many of the mineworkers who are transferred from older mines are unable to shift their families due to housing shortage and lack of education facilities. This is resulting in the workers frequently migrating to their places of residence and on many occasions making them indulge in high-risk behavior making them vulnerable to HIV. Ramagundam Area hospital reported a high incidence of HIV among the workers engaged at Bhupalapally site. It was found that these workers are transferred from some of the older mines and have not been provided housing and educational facilities to bring their families. As a result the incidence of HIV among these workers seems to be increasing. This makes an additional case for the Company to consider making provision for housing facilities.
- Labour Unions can play an effective role in spreading the awareness on HIV and facilitating the prevention and care and support services. Union meetings should begin with a sensitization component on HIV with a discussion on prevention and care issues. Necessary capacity building support need to be provided by the Medical and HRD departments in this respect.



Concept note

## Annexure: 1

# Economic impact of HIV/AIDS on Singaneri Collieries Company Limited

### Background:

India, with an estimated 5.1 million People Living with HIV/AIDS (PLWHA) at the end of 2003, is home to nearly 13 percent of the global HIV population. In absolute numbers, India is second only to South Africa in the world. Nearly 90% of the infections have been reported from the most productive 15-49 age group. HIV/AIDS has become one of India's most complex epidemics, presenting a challenge that goes beyond the traditional boundaries of public health, raising fundamental issues of human rights and threatening development achievements.

Since the infection strikes mostly those who are at their productive prime, HIV/AIDS becomes a workplace issue. It has a profound impact on workers and their families, enterprises and national economies. The ILO estimates that at least 26 million workers globally are living with HIV/AIDS. HIV/AIDS has become a major threat to employment objectives and labour market efficiency. The loss of workers due to AIDS related illnesses or the demands of caring can result in serious declines in productivity, loss of earning and attrition in skills and experience.

**The International Labour Organization (ILO)**, in consultation with its Indian constituents and the National AIDS Control Organization (NACO), has developed a three-phased programme, aimed at establishing a sustainable national project on HIV/AIDS in the World of Work in India.

The project is steered by a Project Management Team (PMT). The PMT has representatives from the Ministry of Labour, Government of India, NACO, V.V. Giri National Labour Institute (VVGNI), employers' and workers' organizations, People Living with HIV/AIDS, UNAIDS and the ILO.

The Project has undertaken a literature review of the existing information on impact of HIV/AIDS in India. Absence of studies on the impact of HIV/AIDS on enterprises/sectors in India emerged as a key gap in the literature review. Therefore, the ILO

Project attempts to take up an initial step towards filling this gap by starting with a coal sector enterprise. The study is proposed to be undertaken in the Singaneri Collieries Company Limited (SCCL), Andhra Pradesh. The selection is based on following reasons:

1. Andhra Pradesh is a high HIV prevalent state of India.
2. Andhra Pradesh State AIDS Control Society has already initiated HIV/AIDS workplace programme in SCCL with technical support from the ILO Project.
3. SCCL is a big undertaking employing more than 100,000 workers, located in 13 collieries in the state.
4. Some of the mines of SCCL are in the high HIV prevalent districts of Andhra Pradesh.

### Socio-demographic profile of the Andhra Pradesh

Andhra Pradesh (AP) is the fifth largest state in India in terms of both area and population. The state has 23 districts with 34 per cent of the land area along the coastal side with a coastline of 970 kilometers making it as the largest maritime state in India. Though AP is predominantly an agricultural state it has been rapidly changing as the contribution of agriculture to state domestic product declined from 43 per cent in 1980-81 to 35 per cent in 1996-97. According to the census 1991, the agricultural sector provided a livelihood to 71 per cent of the working population in the state. The natural harbour of Visakhapatnam, besides catering to the needs of neighbouring states, facilitates export of iron ore to Japan and other countries.

The state has seen a rapid industrial growth since the early 1960s. The state capital Hyderabad houses the fast-growing software industries, which is developing into a major centre for information technology in the country. The urbanization process in the state is also as of the same level of urbanization of the country (26%). AP is one of the educationally backward states in India. The literacy rate among the population (age 7 and above) was 44 per cent.

Andhra Pradesh had a total population of 76.1 million accounting for nearly 8 per cent of the total population of India as per the census of 2001. This indicates a decadal growth rate of population around 14 per cent.

About 70 per cent of those women employed are in the farming sector implying women are engaged in highly labour intensive work. A significant feature of women's work in Andhra Pradesh is their substantial contribution to the family earnings.

## HIV/AIDS Scenario in Andhra Pradesh

Andhra Pradesh falls in the category of high-prevalent states of the country with a prevalence of 1.2 per cent among the mothers attending anti natal clinics and 30.40 per cent among the STD clinic attendees (NACO, 2002). There has been 4 per cent increase of prevalence amongst STD clinic attendees compared to 2001. However there has been a slight decrease in the prevalence among the mothers attending ANC clinics (1.50% in 2001 to 1.25% in 2002), (NACO, 2003).

The National Family Health Survey - 2 found that about 45 per cent of women in Andhra Pradesh have never heard of AIDS. The knowledge levels were varied according to the women's age, older women had somewhat lower knowledge compared to younger women. The knowledge levels also varied between illiterate and literate women. The differentials indicated that women who have had education up to high school had higher knowledge (96%) compared to illiterate (38%) (NFHS-2, 1998-1999).

## SINGARENI COLLIERIES COMPANY LIMITED (SCCL)

SCCL is a joint undertaking of Government of Andhra Pradesh and the Government of India. The equity capital is shared in the ratio of roughly 51:49 between Government of Andhra Pradesh and the Central Government respectively. The headquarters of the company is at Kothagudem in Andhra Pradesh. SCCL produces about 10% of the country's coal production and 76% of its production is dispatched to the coal based thermal power plants in Maharashtra, Andhra Pradesh and Karnataka. Singareni Collieries has manpower of 1.07 lakhs. The company considers human resources as the major asset and top priority is given to improve the quality of life of its employees. Under the welfare schemes for its employees SCCL provides better housing, medical and educational facilities. Besides these, the company is also campaigning for health related issues like malaria prevention, nutrition and sanitation, diabetes control, prevention of heart ailments and HIV/AIDS.

A voluntary society named as "Singaneri Sewa Samithi" was established for the purpose of imparting skills and training to the unemployed eligible children of the company employees so that they get suitable employment opportunities. The society also provides avenues of livelihood for the families of those employees who died while in employment or retired on medical grounds. The society also inculcates the habit and need for savings among the employees.

The company had spent nearly 3.20% of its net profit margin in providing medical and sanitation facilities to its employees in the year 2001-02. Though, there is no evidence to claim that HIV/AIDS is increasing the company's health expenditure, the recurring expenditure on medical and sanitation which is Rs.461 million indicates an increase of 13% in 2001-02 compared to the previous years expenditure (recurring Rs.405 million).

## The rationale for impact analyses of HIV/AIDS in SCCL:

Considering the fact that Andhra Pradesh falls in the high prevalent states of India for HIV/AIDS there is a fertile ground of its further spread amongst the workers of Singareni Collieries. Given the fact that the workers in the collieries are subject to long hours of work and receive a good remuneration, an assumption can be drawn that some of them might be indulging in high-risk sexual behaviour making them vulnerable to HIV/AIDS. As it is evident from the increased expenditure of the company on medical and sanitation, there is a likely hood that the infection is penetrating into the workforce of Singareni Collieries, which would increase expense burden of the company in terms of providing medical care and supporting the families that are affected by HIV/AIDS.

With above background, the ILO Project on HIV/AIDS would like to take up an impact assessment of HIV/AIDS on the SCCL.

## The Objectives of the study:

1. To assess the vulnerability of coal workers to STI/HIV/AIDS.
2. To asses the present impact of HIV/AIDS on SCCL in terms of:
  - a. Loss of Production, if any
  - b. Medical expenses; and
  - c. Increased expenditure on workers replacement, in case of AIDS related illnesses and deaths, if any
  - d. Expenditure on care and support of the infected if any in this context.
3. To assess the future impact of HIV/AIDS on the company in light of workers' Vulnerability and present trends.
4. Based on the findings of the study, recommendations would be made to SCCL to take appropriate measures.

The main **areas of inquiry** would include the following:

### Demographic profile of workers

Male / Female, Marital status, Living alone or with family, Living conditions, Migration status

Knowledge , Attitude, Behaviour, and Practices (KABP) survey of a representative sample of workers of SCCL.

#### Impact on the company

1. Is there any evidence of absenteeism due to HIV/AIDS related ailments?
2. Is absenteeism due to health illnesses on the rise? What is the share of HIV/AIDS related absenteeism to the total?
3. Is there any production loss due to man-days lost, if yes what proportion could be attributed to AIDS related illnesses?
4. What medical benefits is provided to workers, has any increase been noted due to AIDS related illnesses?
5. What have been the expenses on providing medical facilities to workers in the last three years?
6. What is prevalence of Sexually Transmitted Infections/HIV/AIDS among the workers?
7. Have some employees opted for voluntary retirement due to HIV/AIDS, if yes, what retirement benefits has the company offered?
8. Has the company experienced loss of skilled labor due health illnesses and what proportion it is due to HIV/AIDS?
9. Has the company experienced deaths in the company due to HIV/AIDS?
10. What are the pension benefits to the families of employees who die of HIV/AIDS including support of AIDS orphans?
11. How did the company manage to replace those workers lost due to HIV/AIDS?
12. What are the costs involved in recruiting and training of staff hired to replace those who are affected by HIV/AIDS?

All the above would be compared to the initiatives undertaken by SCCL to generate awareness on HIV/AIDS among its workers. The cost would include various campaigns undertaken to generate awareness through its training institutes, schools and other prevention initiatives undertaken.

The out come of this study will be an in-depth understanding of present and likely impact of HIV/AIDS on SCCL. The benefits of launching a full fledged HIV/AIDS prevention programmes will be highlighted, and projections will be made on the likely impact of HIV/AIDS with and without HIV/AIDS prevention programmes. Based on the findings of the study, recommendations would be made to Singareni Collieries Company Limited in for taking up appropriate measures. Such a study will provide invaluable information to SCCL and other similar enterprises in India, particularly in the coal sector. The study findings will be useful for advocacy with the Industry and Government for the Work place interventions.

The methodology of this study would include KABP survey through a structured questionnaire administered amongst workers. For assessing the present impact, in-depth interviews will be conducted with the management; officials of the Human Resource department and medical departments, and relevant documents will be reviewed.

A Technical Advisory Group (TAG) of two-three experts will be set up by ILO to guide this process. Representatives of Andhra Pradesh State AIDS Control Society (APSACS) and SCCL will also be involved in planning and execution, as they are the key partners in this study.

Some critical assumptions:

1. SCCL would be willing to participate in the study.
2. Required information (mentioned in the areas of inquiry under impact heading) would be available with SCCL and SCCL would be willing to share the same with the research team.