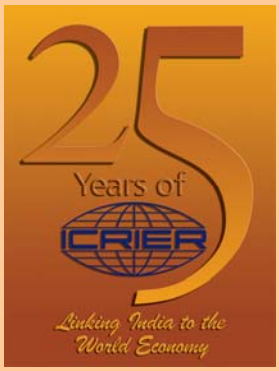

Working Paper No. 198

IMPACT OF PREVENTIVE HEALTH CARE ON INDIAN INDUSTRY AND ECONOMY

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INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS

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Foreword

In India, the health care system is experiencing dramatic changes from what it was a few decades ago. Preventive, as opposed to curative, health care has become the preferred option in most developed countries as it allows employees to be more productive. However, preventive health care in India is still at an early stage. Sedentary lifestyle has led to heart diseases and high levels of stress. Preventive health care involves measures to identify and minimize the risk of diseases, and alter the course of existing ones for a healthy and productive life.

This study, being the first of its kind in India, makes an important contribution to preventive healthcare practise in the corporate sector by examining the linkage between corporate preventive health care programmes and profitability. In order to assess the impact of preventive health care on the Indian Industry, a survey of some of the best-performing companies and a sample of employees from the manufacturing and service sector was undertaken. Finally, based on the findings from our surveys, certain policy recommendations have been made to promote preventive healthcare practise in India's corporate sector and ensure productivity and competitiveness of the Indian Industry.

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Abstract

In this study, the authors have tried to examine the empirical evidence on the relationship between preventive health care and labour productivity and corporate profitability. While doing so, they try to generate awareness on the positive role of preventive health care in boosting the corporate sector's performance and improving the country's economy. Toward the end, based on their findings, they offer recommendations for policymakers and corporate management to promote preventive healthcare practice among employees.

The primary research undertaken for this study included an electronic survey of some of the most well-established companies in the country, as well as a field-cum-electronic survey with a sample of employees in Delhi and the National Capital Region.

Preventive health care holds enormous promise for the competitiveness of Indian companies, and for the country's economy in the global arena. In an era when the service sector is gaining pre-eminence, the value of the individual employee has increased more than ever before. Employees with specialized skills are the focal point on whose well-being and performance the productivity of a company rests. In a highly competitive corporate environment, companies cannot afford the absence of their employees due to sickness, caused by a sedentary lifestyle, etc., or a poor performance at the workplace due to poor health. Both as part of their corporate social responsibility and to boost their profits, a number of firms are offering preventive health care facilities to their employees. And it is on their performance, productivity and profitability that India's growth potential and global competitiveness depends substantially.

Unfortunately, while the corporate sector has been quick to realize the benefits of preventive health care, policy has lagged behind and we do not yet have fiscal or other incentives that encourage prevention. While public spending on health has stagnated at 0.9 per cent of the GDP since the mid-1980s, and the government per capita health expenditure is one of the lowest in the world (US$7, as against US$2,548 in the United States), the government should focus its limited resources towards the health of the poor, and provide tax exemptions to sections which can take care of their own health needs.

Key words: preventive, executive, corporate health care, check-ups; employee wellness; lifestyle changes; health policy; fiscal incentives.
JEL Classification: I11, I18, 04.

1 Introduction*

Health is a basic fundamental right of all citizens and health promotion forms an intrinsic part of health care. According to the definition by the World Health Organization, "Health is a state of complete physical, social and mental well-being and not merely an absence of a disease or infirmity." In recent years, this statement has been modified to include the ability to lead a "socially and economically productive life". Preventive health care is an important determinant of health since prevention means avoiding or slowing the course of a disease which is essential for a good quality of life. Investment in human capital leads to a healthy and educated populace which is in a better position to contribute to the growth of the economy through its employability, creativity and productivity.

According to industry analysts, there has been a growth of 25 per cent in the preventive health care market over the past five years. Working on the proverb that prevention is better than cure, there is a growing consciousness about health-related issues among people, giving a boost to preventive health check-ups in hospitals. Annual health check-ups, which were largely the privilege of corporate executives, are now being sought after by the middle class as well. Most hospitals routinely cater to walk-in patients that avail of the tailor-made packages for all age groups. There are even cases of people gifting test packages to their parents. Apollo Hospitals, which pioneered the concept of preventive health packages in India, conduct a couple of hundred preventive health check-ups a day.

A healthy society reflects the well-being of a nation and quality of human capital is an important contributor to economic growth. India's future health care needs will be determined by population growth and economic growth aspirations. Figure 1 depicts the simple linkage between disease and economic growth. The burden of disease leads to a sense of deprivation regarding health and productive potential. The incidence of chronic diseases not only depletes household income and savings but also diverts resources away from other investment activities. The relationship between health and economic growth is straightforward: Disease reduces life expectancy and economic productivity adversely affecting the number and quality of the country's workforce. This may, in turn, result in the lowering of national income thereby fuelling the spiral of ill health and poverty. The most worrisome aspect of ill-health and disease is the persistence of its impact across generations. The next generation is more vulnerable to diseases owing to poor nutrition or insufficient hygiene and sanitation. In order to take care of the sick, it is often the case that older children have to drop out of school, with adverse impact on their long-term economic prospects. As opposed to this scenario, good health positively affects human capital, productivity and economic growth. Labour productivity increases as a result of lower mandays lost and the reduction in disability and incapacity. This frees resources that would otherwise have been used for treatments and helps to break the poverty trap.

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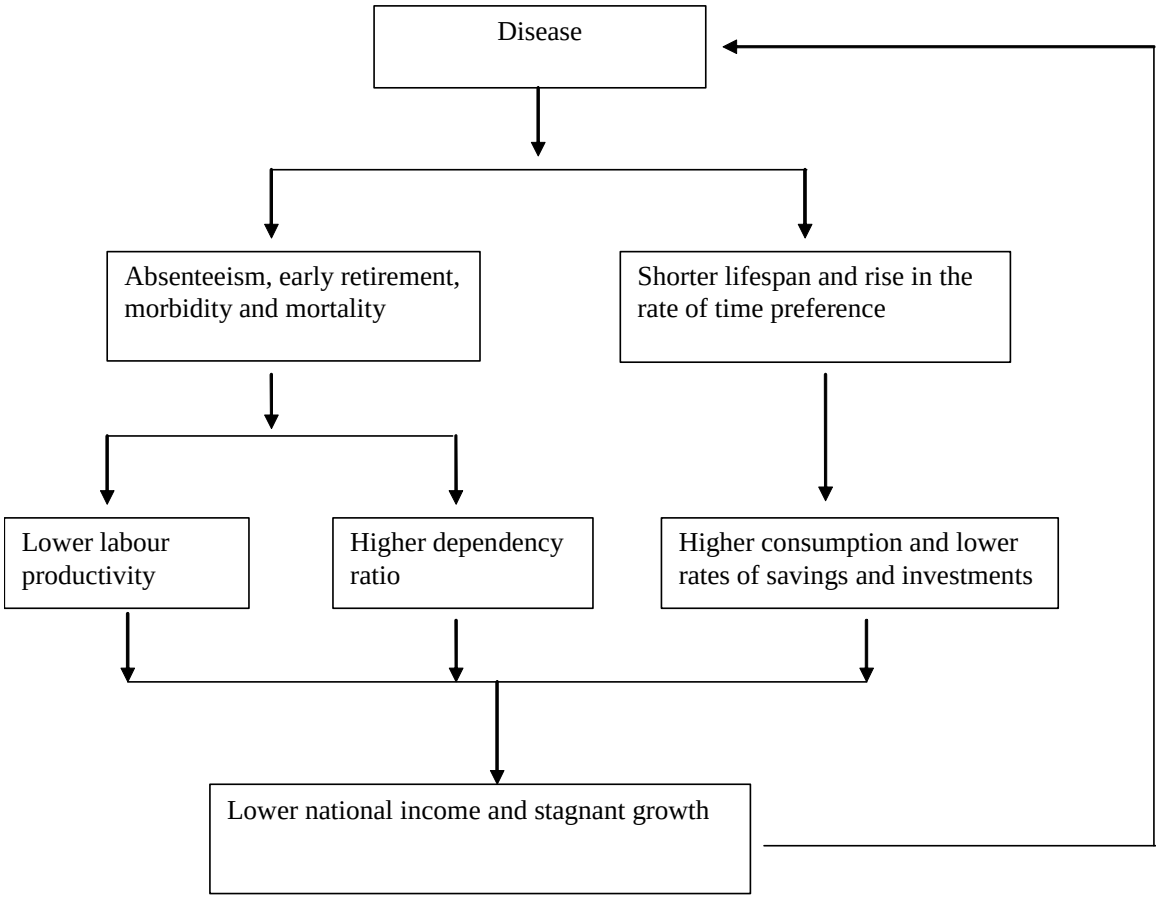
Further, poor health conditions can have a debilitating impact on the economy in terms of lower investment flows and reduced tourist traffic. Besides, in knowledge-based economies, many of the businesses rely on intellectual capital including creativity and innovation which is critically dependent on the health of employees. Moreover, the management of employee health has the potential to directly impact on the reputation of a company in this age of free information where corporate reputations are increasingly becoming fragile. Thus, for modern business organizations, it is important to maintain and improve the health of its human resources so that the employees feel that their company looks after their well-being.

Figure 1: Relationship between disease and economic growth



The purpose of this study is to generate awareness about employee well-being and engage the private sector in taking steps to improve health standards of their employees through preventive health care. Given that employees are increasingly spending more time at work than at home, it is leading to situations of stress or mental pressure to complete a task within a given deadline. Besides job stress and burnout, new types of

occupational hazards are affecting the youth owing to lack of physical activities like muscular pain, cervical, spondolytis, slip disk, hypertension, depression, high blood pressure, osteoporosis, acidity, diabetes, obesity, arthritis and sleeping disorders. Hence, the workplace has become a critical place for successful prevention strategies and the employers have an important role to play in changing the sedentary lifestyles of employees by providing a facilitating environment and infrastructure to motivate employees to undertake physical exercise and stress-relieving measures like yoga or gym together with regular check-ups and counselling for preventive health care. While the private sector has been quick to realize the benefits of preventive health care, policy has lagged behind and there is a need for fiscal or other incentives to encourage prevention.

The rest of the report is organized as follows: Section 2 describes some of the theoretical literature regarding preventive health care, Section 3 outlines the prevailing system of health care provision in India, Section 4 carries out a SWOT analysis of vouchers versus cash payments, Section 5 deals with the survey and results, Section 6 gives a comparison with other countries and Section 7 concludes with a summary and policy suggestions.

2 Literature Review

In the literature on health economics, theoretical models analyze prevention in terms of human capital models and insurance models. Models of consumer demand for health prevention can be seen as an individual's decision to invest in health just like investing in other forms of human capital. According to Grossman's (1972) seminal model, the individual's health capital stock determines the utility flow as well as the time available for market and non-market productive activities. The demand for health inputs is derived from the demand for health capital which is viewed as a household health production function with time and medical care as inputs. In these models, prevention is taken as an investment decision to add to the health capital stock since the higher the health stock, the lesser the time spent ill. However, this model does not distinguish between preventive and curative care. Grossman and Rand (1974) treat prevention and cure as separate inputs into the household health production function. They assume that groups with low depreciation rate of the health capital stock demand preventive health care and groups with high depreciation rate of the health capital stock demand curative health care. This allows for prevention and cure to be treated as substitutes by consumers.

A higher endowment of health increases demand for health investment, so differences in endowed health are magnified in terms of attained longevity. In Grossman's (1972) model, health capital is assumed to depreciate at a higher rate as people get older. Thus, if the price elasticity of demand for health is lower than unity, the derived demand for curative medical care increases with age. Cropper (1977) gets the same results for preventive health care with endogenous length of life and depreciation rate rising with age. In general, since the risks of different illnesses show different lifecycle patterns, the demand for prevention depends on the specific intervention, where intervention is defined as any attempt to intervene or interrupt the usual sequence in the development of a disease. For some preventive actions like exercises, the health benefits are realized much

more quickly by older people and so will be not as heavily discounted as when young people consider the intervention.

In addition to models that take the human capital approach, models of insurance and behaviour under uncertainty also analyze prevention decisions. Intuitively, health is an irreplaceable commodity given the incompleteness of the technology of cure. Despite insurance for curative care, prevention is attractive because the choice is between completely preventing the illness or incompletely curing it. Many large firms pay health care claims of their employees. These firms have an added incentive to invest in prevention for improving employee productivity and reducing absenteeism. According to the study conducted by the Public Health Service (1992) for the United States, 81 per cent of worksites with 50 or more employees offered at least one health promotion activity such as curbing smoking, health risk assessment, blood pressure control, weight control and exercise. More than 25 per cent of the firms surveyed claimed the reduction in health insurance costs as one of the top two or three reasons for health promotion programmes.

However, market failures may lead to too little preventive from the point of view of the society (Kenkel, 2000). In the case of infectious diseases, externalities arise from "herd immunity" where an individual's chance of getting an infectious disease falls when others in the society have already been vaccinated. Thus, the marginal benefit to society of a vaccination exceeds the private marginal benefit and this means that private vaccination decisions will result in a less than socially optimal vaccination rate. Thus, intervention is required to correct the market failure.

According to the World Health Organization (2005), the estimated loss in India's national income due to heart diseases, stroke and diabetes in 2005 was US $9 billion compared to US $3 billion for Brazil. These losses are projected to exceed US $200 billion in the next decade, unless preventive measures are taken in which case, an accumulated economic growth of US $15 billion can be expected. Another study by Abegunde and Stanciole

Table 1: Estimates of losses in national income due to chronic diseases

(US$ billion, 1998 prices)

	Loss in 2005	**Loss in 2015**	**Average annual loss**	**Income loss as a % of GDP in 2015**
Brazil	-2.7	-9.3	-5.1	0.48
China	-18.0	-13.0	-53.5	1.18
India	-8.7	-54.0	-23.0	1.27
Nigeria	-0.4	-1.5	-0.8	0.65
Pakistan	-1.2	-6.7	-3.0	1.02
Tanzania	-0.1	-0.5	-0.2	0.86
Canada	-0.5	-1.5	-0.9	0.15
Russia	-11.0	-6.6	-29.8	5.34
U.K.	-1.6	-6.4	-3.4	0.32

Source: Abegunde and Stanciole (2006)

(2006) in nine countries using a growth accounting framework found that deaths due to chronic diseases will adversely impact labour supplies and savings and hence countries will lose large amounts of national income. As more people die every year, these losses tend to accumulate over time. Table 1 shows the estimated average loss in national income as a result of three chronic diseases namely cardiovascular, stroke and diabetes. It is projected that India will lose US $23 billion annually in foregone income over the decade 2005 and 2015 owing to deaths relating to just three chronic diseases. These losses when compared to what GDP would have been in the absence of chronic diseases indicate large absolute losses. In particular, the income loss as a percentage of GDP for populous countries like India will be high, around 1.27 per cent in 2015 (see Table 1). This loss in income is attributed to labour units lost on account of death from chronic disease as well as the medical expenditure to treat these conditions. Medical expenses are covered from current consumption to begin with but in later stages eats into the savings and investments of households particularly in developing countries that do not have provisions for health insurance. In fact, the study has estimated that a 2 per cent reduction in chronic disease death rates annually between 2005 and 2015 will result in an accumulated income gain of US $15 billion in India.

3 Preventive Health Care Providers

India is witnessing rapid economic growth and as per capita incomes rise, it is expected that consumers' demand for health care will rise and they will be willing to spend more on quality of care. Consumers aspire for greater fitness and well-being as they move up the income ladder. In 2004, the richest one-third of the population accounted for three-fourths of the total private health expenditure (Ernst and Young, 2006). Further, as the disease profile shifts from infectious to lifestyle diseases, health care expenditures will rise still further. Inpatient expenditure is likely to rise from 39 per cent to 50 per cent of the total health care expenditure. While the share of infectious diseases is expected to decline, lifestyle diseases are expected to rise concomitantly. To make matters worse, there is increasing evidence that these lifestyle diseases are also affecting the poor due to low resilience to infections, malnutrition and stress. There is a growing need to address the demand for new skills such as counselling, psychiatry and trauma.

Government expenditure on health care in India is very low at only 0.9 per cent of GDP as compared to 3 per cent of GDP for developing countries and 5 per cent of GDP for developed countries. With the role of the government declining in health care, private initiatives have stepped in to fill the gap in the ever-increasing demand for health care services. The bulk of the health care services in India are catered to by the private sector, which is one of the largest in the world since it accounts for 80 per cent of all physicians, 75 per cent of all dispensaries and 60 per cent of all hospitals in India (Ernst and Young, 2006).

Preventive health care activities are offered by private hospitals that involves measures to identify and minimize the risk of disease, improve the course of an existing disease and screening for early detection of disease where screening is a method of finding diseases

in people who do not yet have any signs or symptoms of the disease being screened for. A preventive health care check-up usually involves a complete physical examination to make sure that the health of an individual is in good condition. The physician analyzes the risk factors that may lead to a disease or health condition in the future and runs tests for early warning signals for these. Hence, preventive health check-ups help in bringing down the cost of medical emergencies by catching them early. They are complementary to health insurance since if good health is confirmed, then the individual can choose to have lower health insurance cover for contingencies like hospitalization and may avoid critical illness coverage. A typical comprehensive health check-up includes tests for blood, sugar, cholesterol, urine, digital chest X-ray, liver profile, proteins, lipid profile, renal profile, pulmonary function test (PFT), stress test or ECG, PSA, gynaecology consultation, physician consultation, dental consultation, ophthalmology consultation and dietary recommendations. For instance, a heart check-up consists of echocardiography, blood test, general test, haemogram and consultation by a cardiologist and this can go a long way in ensuring a healthy heart. Preventive health care plans that screen every part of the body meticulously are mainly offered by hospitals or larger diagnostic centres where the costs range from Rs 500 up to Rs 5,000.

As a part of the study, health care providers were contacted to give their viewpoints. The Apollo Hospitals Group has packages for preventive health care that are availed of by mainly the middle and senior management employees as well as the potential employees for their pre-employment check-ups. It has detected diseases like stroke, hypertension and diabetes which are all lifestyle-related. It said that early detection helps the consultant initiate timely corrective measures to ensure better management and outcome of the treatment. It emphasized the need for regular check-ups since a disease can develop at any stage in life.

Table 2: Preventive health care check-ups offered by Apollo Hospitals Group

Age group	Disease trends observed	Investigations	Frequency recommended	Follow-up action
25-35	Elevated lipids High blood pressure Elevated blood sugar level	General health check-up with ECG	General health check-up every two years	-
35-45	Diabetes Obesity High blood pressure Elevated lipids	Health check-up with an Echo and TMT	Heart check-up every year	Once in 6 months
45 and above	Acute MI Hypertension Reno vascular complications	Health check-up with an echo and TMT	Heart check-up every year	Once in 3 months

Source: ICRIER Survey

K.G. Hospital also has packages for preventive health care to minimize risks of disease and has detected chronic diseases like anaemia, hypertension, cancer, diabetes, heart disorders and high cholesterol among employees. It said that preventive health care is like an "annual maintenance certificate" for an asset - life. Prevention and not just early detection is required to ensure that symptoms are treated long before they develop into a serious ailment. Late decision means higher expenses and misery and anxiety for the patient's family. Jaslok Hospital has check-ups for all grades of employees as it suggests that stress depends on the personality of a person and is independent of his management grade. It also suggested that preventive health care is required to reduce not just absenteeism but also "presenteeism" whereby employees can improve on-the-job performance. All health care providers were in favour of government action to promote awareness about the cause of prevention and some financial incentives like tax exemptions.

Table 3 lists the proportion of persons per thousand hospitalized due to affliction by various ailments in urban areas. A staggering 80 per 1,000 persons are hospitalized due to chronic diseases of the heart, another 32 per 1,000 persons due to cancer and 24 per 1,000 due to diabetes. These hospitalization cases can be easily prevented by early detection and simple preventive steps like exercise and dietary changes. Similarly, communicable

Table 3: Per 1,000 distribution of people hospitalized by ailment type in urban areas

Ailment	**Proportion**
Diarrhoea/dysentery	62
Gastritis/peptic ulcer	39
Hepatitis/jaundice	22
Heart disease	80
Hypertension	32
Respiratory ailments	30
Tuberculosis	17
Bronchial asthma	30
Disorders of joints and bones	26
Diseases of kidney	49
Gynaecological disorders	50
Neurological disorders	32
Psychiatric disorders	6
Cataract	24
Diabetes	24
Malaria	36
Fever of unknown origin	67
Locomotor disability	9
Accidents/injuries/burns	88
Cancer and other tumours	32
Other diagnosed ailments	166
Other undiagnosed ailments	15

Source: Government of India (2006).

diseases like malaria (36/1,000) and tuberculosis (17/1,000) can be prevented by health care education and promotion regarding clean and hygienic ways of living. Preventive health care measures can go a long way in saving valuable resources in terms of time and money by avoiding extreme morbidity conditions that ultimately lead to hospitalization. The importance of prevention assumes even more urgency looking at the future projections of some of the diseases. HIV/AIDS cases are likely to triple and cardiovascular diseases and diabetes will more than double by 2015, along with a corresponding increase in the prevalence level of tuberculosis and a rise of 25 per cent in cancers (Government of India, 2005).

4 SWOT Analysis of Vouchers versus Cash Payment

A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis is a helpful tool for comparing and strategy planning for any business initiative. A SWOT analysis of paying for preventive health care measures in cash as compared to vouchers shows that vouchers are beneficial for the employer, employee and the service provider. Since there are enormous pay-offs in the long term for investments in health care and business entities are in a better position to identify health care needs of their employees, they can sign efficient contracts with health care providers. By capitalizing on the strengths and opportunities and minimizing the weaknesses and threats, a voucher system has the potential to result in better health care, lower costs, greater savings and emerge as a new payments solution for consumers.

There are many of strengths of using vouchers vis-à-vis cash payments for preventive health care. To begin with, keeping in mind the current trend of a cashless credit-card economy where people prefer to use all sorts of cards or coupons instead of currency, vouchers are particularly well suited for the plastic economy of today. Thus, vouchers are not only more convenient but are more efficient since they will ensure that the beneficiary will go for a health check-up before the expiry of the voucher. Further, another reason why vouchers will ensure that employees go in for regular check-ups as opposed to cash payment is that cash payments may result in employees filing fraudulent claims with false medical bills when they are reimbursed for medical expenditures. Moreover, vouchers can act as a low-cost way of introducing preventive health care to employers and their employees. They can be lured into going for check-ups if the vouchers are offered at a slight discount when the company buys vouchers in bulk. From the viewpoint of a person looking for jobs, it is likely that his decision to join a particular job would be influenced by non-monetary perks besides the basic salary. Therefore, perks that include preventive health care vouchers may help in attracting high-quality workforce for the company. From the point of view of the service provider, vouchers can turn out to be the ultimate marketing tool since vouchers mean repeat customers and that translates into loyalty for a particular service provider.

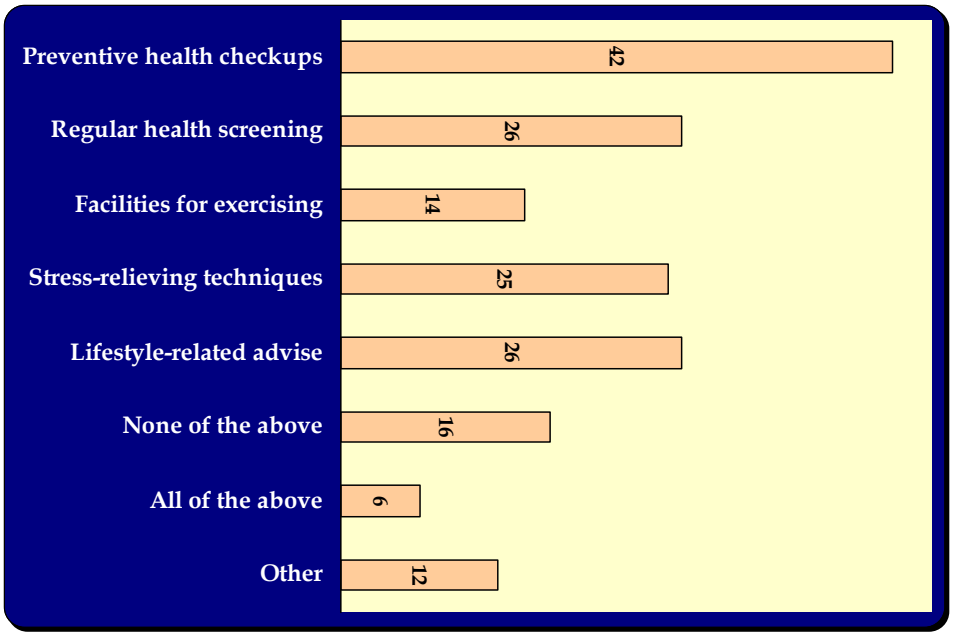
Besides all these strengths that vouchers offer, the weaknesses relate to the challenge of making people accept this new mode of payment for a service as opposed to traditional cash payments. Thus, it would require a lot of effort to generate awareness about

vouchers and how they work. This would then translate into opportunities for industry if it became a widespread practice. One way of doing this is by making the industry leaders adopt vouchers and once they realize the benefits, it would be easier for the others to follow the voucher scheme. In addition, if the government offers tax exemptions to the companies that give vouchers for preventive health care as part of their corporate social responsibility, it will be an added incentive for employers to maintain employee health care.

5 Survey and Results

In order to assess the impact of preventive health care on the Indian economy, we undertook an online survey of firms belonging to the manufacturing and services sectors (refer to the Annexure regarding the survey methodology). The questionnaire asked the firms the type of preventive health care activities offered by them. At least 65 of the 81 respondents offered some sort of preventive health care measures to their employees. An overwhelming two-thirds of the respondents assumed preventive health care as a part of their corporate social responsibility, and 82 per cent agreed that preventive health check-ups increase company productivity. More than half the firms offered preventive health check-ups to their employees.

Figure 2: Preventive health care measures offered by companies

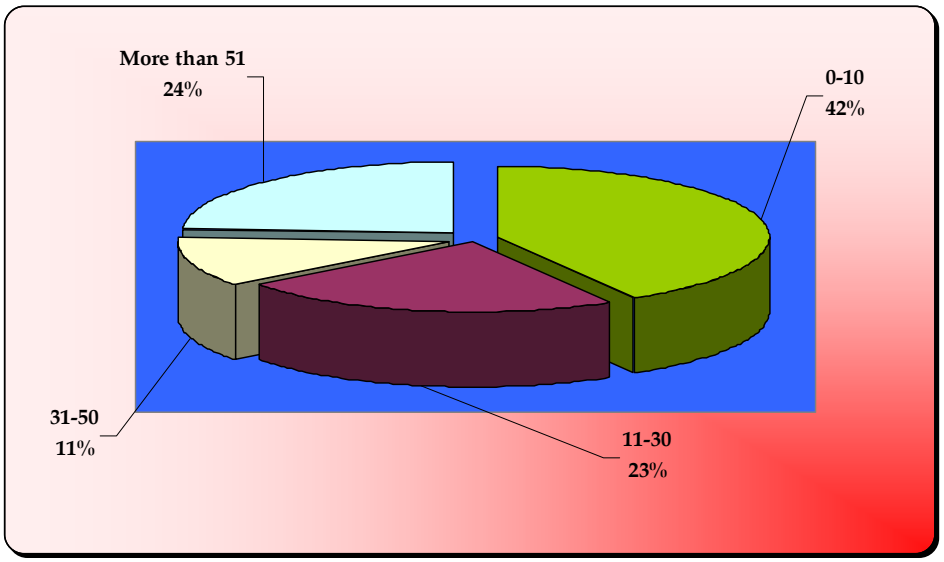


Source: ICRIER Survey

Figure 2 shows that a sizeable number of respondents made available other facilities for prevention of disease like regular health screenings, stress-relieving techniques like yoga and lifestyle-related advise like diet and nutrition counselling. In addition, of the firms that offered facilities for preventive health care, 46 per cent had a corporate tie-up with

hospitals[1] to deliver these services indicating corporate discounts that are generally offered to firms as compared to individual packages. Some of the firms also subscribed to the provision of preventive measures through third party insurance providers or the Employees' State Insurance Scheme (ESIS). While the responding firms confirmed the importance of preventive health care and regular check-ups, only 33 firms provided for annual check-ups and 8 firms biannual check-ups. Further, 26 firms were unsure about the interval of preventive health check-ups for their employees, which was reaffirmed when the respondents were asked if there was a company policy for follow-up action on the preventive health check-ups of the employees and more than half the respondents gave negative answers. This is where corporate intervention is required to make the employees go in for routine check-ups, given the uncertainty of disease and the need for early detection. The expenditure incurred in the previous year by firms on preventive health check-ups ranged from zero to over a million rupees. There is a possibility that some respondents may have included their general health expenditure or reimbursements or insurance premiums.

Figure 3: Mandays lost owing to sickness



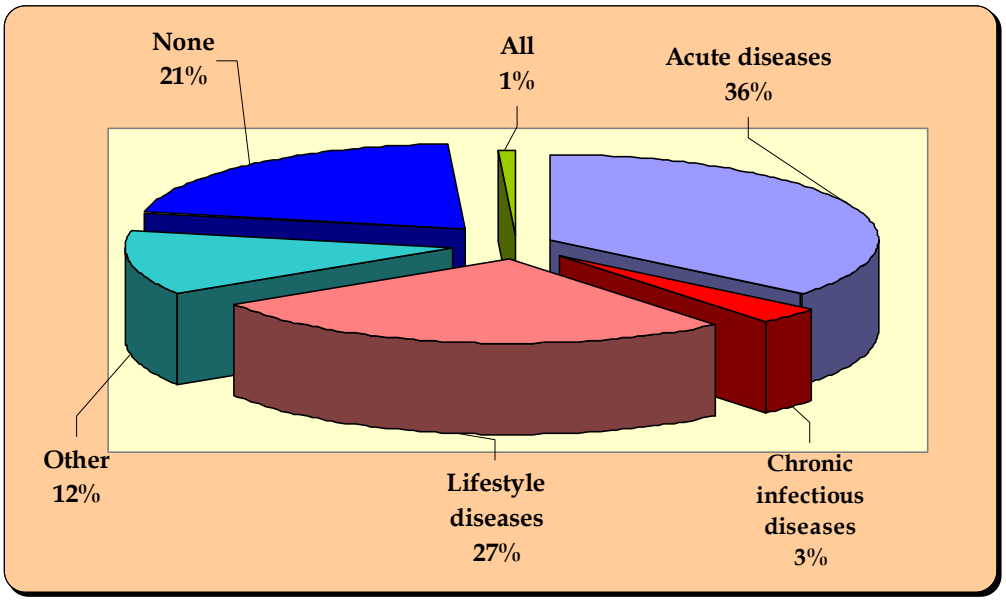
Source: ICRIER Survey

To analyze the impact of disease on company performance, the respondents were asked about the mandays lost owing to sickness. The direct impact of employee sickness is

[1] The list of hospitals included the All India Institute of Medical sciences (AIIMS), New Delhi; Alluri Sitarama Raju Academy of Medical Sciences, Eliru; AMRI, Amrita Institute of Medical Sciences, Cochin; the Apollo Group of Hospitals; , Belle Vue Nursing Home, Kolkata; Bhatia Nursing Home, Mumbai; BSP & OM SCH Hospital, CMRI, Kolkata; Devaki Hospital, Chennai; Dr, Mahajan Hospital, Amritsar, the Fortis Group of Hospitals; the Godrej Memorial Hospital, Mumbai; Hosmat Hospital, Bangalore; Laxmidevi Kishan Chand Memorial Hospital, Kanpur; Max Healthcare, New Delhi; Mercy Group, Kottayam; MGM Hospital, Warangal; MTMH, Jamshedpur; Neelachal Hospital, Bhubaneswar; Ravi Kirloskar Memorial Hospital, Bangalore; Sitaram Bhartiya, New Delhi; Swami Nursing Home, Tata Main Hospital / Tata Motors Hospital / Tinplate Hospital, Jamshedpur; Usha Hospital Lifeline Charitable Trust, Vijayawada; and Wockhardt Group of Hospitals.

reflected in mandays lost as a result of it. From Figure 3, it is clear that almost a quarter of the companies lose approximately 14% of their annual working days (more than 51 days in a year) due to sickness, and one can expect an equal percentage of loss in their productivity and profits which is a cause for concern. This corresponds with the fact that over 1 per cent of the firms recorded sick leave for more than 20 per cent their employees. This absenteeism was mainly owing to acute diseases like diarrhea, influenza, malaria and dengue, followed by lifestyle diseases like cardiovascular diseases, diabetes, stroke and mental disorders (see Figure 4). Chronic infectious diseases like tuberculosis and HIV/AIDS do not seem to be a major burden for the companies surveyed. Depending on the proportion of employees in different management grades that availed of sick leave, blue-collared workers were at a high risk of disease compared to the medium- and senior-level employees since the former spend a lesser proportion of their income on health care.

Figure 4: Major disease afflictions in past one year

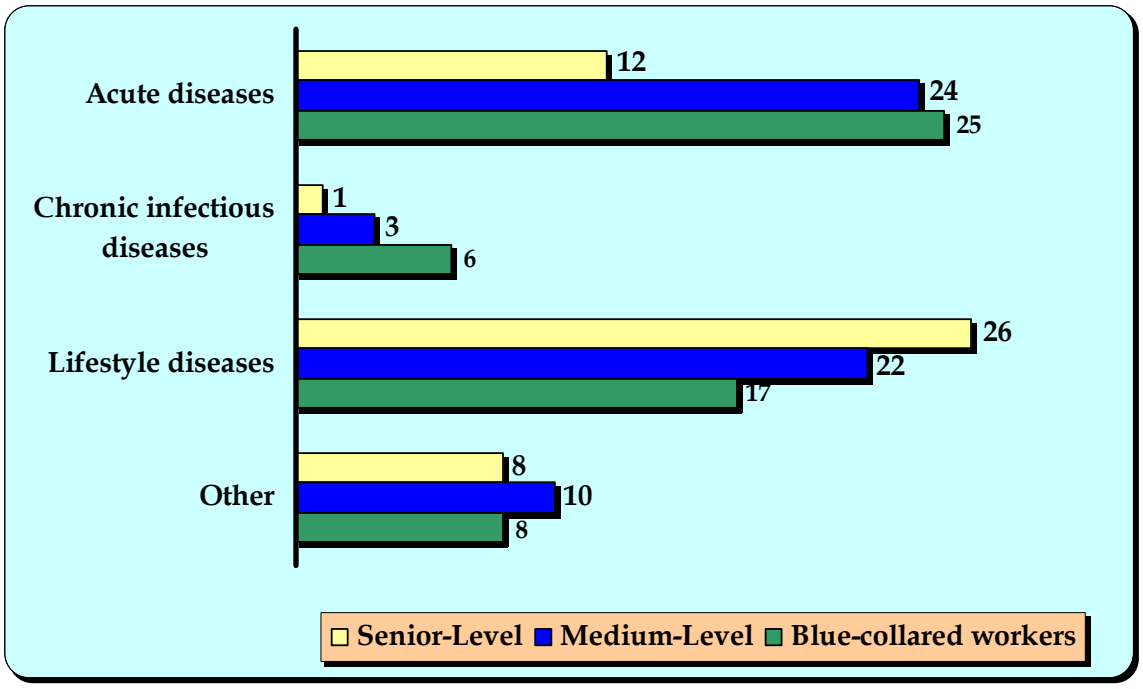


Source: ICRIER Survey

India is in a peculiar situation since it is in a state of transition and diseases afflicting both the rich and the poor can be found simultaneously in the country. The low-income groups are usually affected by infectious diseases while the high-income groups are affected by chronic diseases owing to a sedentary lifestyle. As expected, a majority of the blue-collared workers with low incomes were afflicted by acute diseases like diarrhea, influenza, dengue and malaria as well as chronic infectious diseases like tuberculosis and HIV/AIDS (Figure 5). In general, blue-collared workers are unable to afford expensive curative treatment on their own and are usually not sent for preventive health check-ups by employers, leaving them vulnerable to disease. Senior-level executives with high incomes were afflicted with lifestyle diseases like heart ailments, diabetes, stroke and emotional stress owing to lack of physical exercise and dietary control. This corroborates findings of the Health and Wellness Survey conducted by Apollo Hospitals Group in 2003. They found that more than half of the executives were prone to lifestyle diseases

like cardiac risks, followed by high cholesterol, high blood pressure and diabetes. In fact, they had found that 71 per cent of the employees and 82 per cent of the CEOs were overweight.

Figure 5: Major afflictions according to management grades



Source: ICRIER Survey

Table 4 shows that there is a positive correlation between preventive health care and profits. This suggests that there may be a positive impact of preventive health care on the Indian industry. Given the data limitation of small sample size, the correlation coefficients are not very large, suggesting that there may be other factors at work and profitability is not the only measure of efficiency. Further, there is a negative correlation between profits and absenteeism and profits and mandays lost. In the sample, all large firms have facilities for preventive health care and their correlation coefficients for absenteeism and mandays lost are negative. This seems to suggest that a healthy workforce can contribute to greater profits through greater productivity and savings on medical expenditures. This corroborates with the results of the survey wherein 82% of the respondents (including many of those who do not provide preventive health care facilities at present) agreed that preventive health care measures increase firm productivity and profitability. Employee wellness demonstrates a real contribution to company bottom lines since promoting employee health is a means to controlling health care costs. Thus, in an era where competitiveness and profitability are determined by intellectual capital, promotion of employee health is crucial for the organization. This leads to significant policy implications regarding tax exemptions and other sops for preventive health care activities, particularly for small and medium companies.

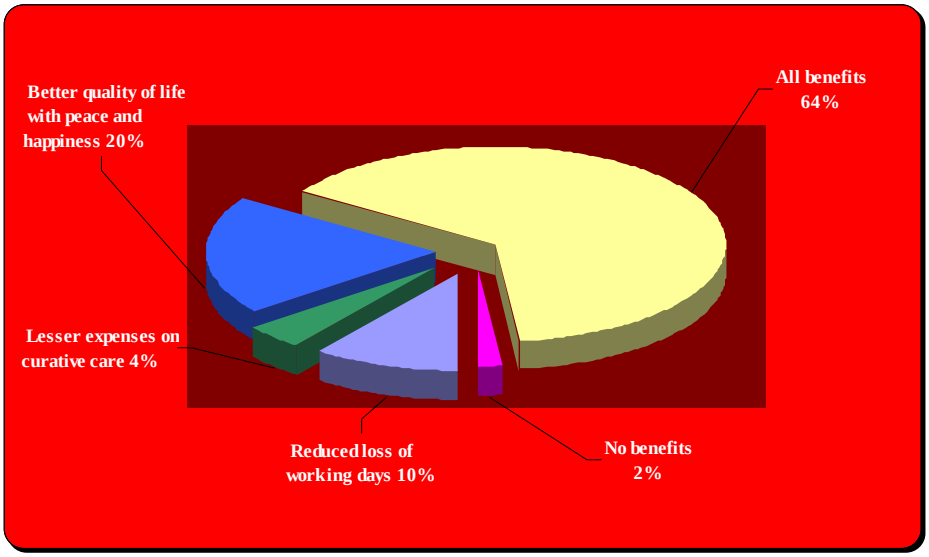
Table 4: Correlation between preventive health care and profitability of Indian companies by size

	Preventive health care	Absenteeism	Mandays lost
All	0.172	-0.047	-0.218
Small	0.299	-0.105	-0.079
Medium	0.28	0.057	-0.151
Large	-	-0.314	-0.368

Source: Based on ICRIER Survey

The study also conducted a field-cum-electronic survey with a sample of employees (N=288; refer to annexure for methodology) since they are the direct beneficiaries of any system of preventive health care. 60 per cent of respondents were working in the services sector. 56 per cent of employees who responded had undergone a preventive health check-up. Interestingly, the same percentage of responding employees were white-collared, among whom there is greater awareness and practice of preventive health care as compared to blue-collared workers. 98 per cent of respondent employees who have undergone preventive health check-ups felt that these were beneficial in terms of a better quality of life and performance at work (see Figure 6). Even those who did not undergo such check-ups felt that such benefits accrue. When asked if any disease was detected as a result of the preventive health care check-up that helped the employees to take timely action, 58 of them answered in the affirmative. Thus, it is clear that preventive health care has direct benefits to employees in terms of a higher quality of life and indirect benefits to the society in terms of a more productive labour force to drive the engine of growth.

Figure 6: Benefits from preventive health care in the employee survey



Source: ICRIER Survey

As regards the financing of preventive health check-ups, more than half of the respondents in the company survey supported the idea of vouchers as an effective

delivery tool for preventive health care measures such as health check-ups and follow-ups. The rest were undecided depending on the merit of the scheme and wanted to know more details of the mechanism and concrete business proposals. Nine of the respondents showed no interest in the voucher system. This is in sharp contrast to the overwhelming support given to the voucher system in the employee survey where 91 per cent of the respondents were in favour of such a scheme for financing preventive health check-ups. Thus, it is important that the merits of the voucher system be made clear to the companies where they will have savings in terms of costs, resources and time. This is particularly true for those companies that reported zero spendings on health care since they have to be educated regarding the benefits of preventive health care for the company and the employees. Moreover, given the dismal state of affairs of public health spending and the non-existent insurance system in India, if the intended beneficiaries (employees) support the voucher system for financing preventive health care, it should be given a serious thought both by the private employers and the government.

6 International Comparisons

In developing countries, the greatest burden of disease is due to communicable diseases, malnutrition and complications of pregnancy and childbirth. In developed countries, the burden of disease is mainly from non-communicable diseases such as cardiovascular diseases, cancer and accidents. As developing countries grow, they are likely to experience an epidemiological transition from communicable to non-communicable diseases. In future, communicable diseases are expected to decline but the emergence of new infections and non-communicable diseases are new threats that have to be dealt with. According to an estimate, 388 million people worldwide are expected to succumb to death due to chronic non-communicable diseases (Abegunde and Stanciole, 2006). Around 80 per cent of these deaths will be in low- and middle-income countries and that too in the most productive age groups. Nearly 45 per cent of deaths due to chronic diseases occur under the age of 70 with a direct impact on working age populations. Developing countries will have to deal with the ground realities of limited resources entwined with the dual burden of infectious and chronic diseases. Thus, preventing lifestyle and chronic diseases is a vital investment, particularly for developing countries like India.

Table 5 shows the health indicators for select developed and developing countries. India's per capita spending on health care at US $27 is abysmally low compared to other countries. India's per capita government expenditure is even lower and highlights the importance of the private sector in health care expenditures. Around three-quarters of the total health care spending in India is accounted for by the private sector which is very high compared to other countries. Of this total private expenditure, 97 per cent is attributed to out-of-pocket spending by individuals and less than 1 per cent to prepaid insurance schemes. This leaves very little room for preventive health care spending in India. This is in contrast to Brazil, Korea and Thailand which are also developing countries but have a much higher per capita health expenditure. In developed countries,

the government plays a significant role as a provider of quality health care with a concomitantly lower share for private health care expenditure.

Table 5: Health indicators for select developed and developing countries, 2003

Country	Per capita total health expenditure ($)	Per capita govt health expenditure ($)	Share of private health expenditure in total health expenditure (%)	Share of out-of-pocket expenditure in private health expenditure (%)	Share of private prepaid plans in private health expenditure (%)
Brazil	212	96	54.7	64.2	35.8
China	61	22	63.8	87.6	5.8
India	27	7	75.2	97	0.9
S. Korea	705	348	50.6	82.8	4.1
Thailand	76	47	38.4	74.8	14.6
Canada	2669	1866	30.1	49.6	42.3
France	2981	2273	23.7	42.2	53.5
Japan	2662	2158	19	90.1	1.7
U.K.	2428	2081	14.3	76.7	23.3
U.S.A	5711	2548	55.4	24.3	65.9

Source: *The World Health Report 2006: Working Together for Health, World Health Organization.*

Notes: *(i) Government health expenditure includes both recurrent and investment expenditures made during the year.*

(ii) Private health expenditure is defined as the sum of (a) outlays for prepaid plans and risk-pooling arrangements for insurance and health maintenance organizations, (b) outlays by private companies for medical care other than prepaid schemes and social security payments, (c) spending by non-profit institutions, (d) household out-of-pocket spending.

Regarding the health care system of China, since Second World War, it has made significant strides in the provision of health care services based on the emphasis on government policies to invest in human development. It has been successful in developing an extensive health care infrastructure that reaches even the remote provinces. It has a three-tier system at the village, township and district levels providing treatment in from basic services at the village level to specialized care at the district level. To supplement the health care infrastructure, China has sufficiently trained medical personnel and is well known for its “barefoot doctors” who serve the villages. It is also important to note that the traditional Chinese medicine is an important part of the health care system and the modern system of medicine has not completely displaced the traditional practitioners of medicine. It also has an effective programme for prevention such as vaccination and improving environmental and health conditions.

Another developing country, Brazil, has demonstrated how other countries with low income and resources can adopt a model of preventive care. In 1987, in the poor state of Cearà, auxiliary health workers living in local communities started the practice of visiting families to provide essential services. It succeeded in improving child health status, vaccinations, prenatal care and cancer screening among women and that too at very low cost since no physicians were involved. In 1994, the health worker programme was integrated into the Family Health Programme that involved physicians and nurses and an integrated preventive health care programme was established with greater autonomy of purchasing decisions left to local bodies. This was backed up by the Ministry of Health that set minimum standards in health care provision and established clinical protocols for service providers. Thus, Brazil has successfully used public-private partnerships to provide health care facilities for its populace.

In Thailand, government concessions have been effective in getting private investments into the health care sector. The government exempted hospitals from corporate tax for 3-8 years, wrote off utility charges for a period of 10 years and allowed 50-100 per cent reduction on import duty for machinery. These measures resulted in the number of private hospitals being doubled during 1990-96. The government also introduced a social health insurance scheme in 1990 wherein all employees in a company employing 10 or more persons are entitled to inpatient services under a scheme equally funded by employees, employers and the government. Public spending on health in Thailand targets the poor section of the population for rural and primary care.

In fact, South Korea has succeeded in increasing the coverage of the population under social insurance from 14 per cent in the mid-1970s to 100 per cent by the beginning of the 1990s. Due to the foresight of the government, health was identified as a priority area and a key element of labour force productivity. By the beginning of 1980s, insurance coverage was made compulsory for the entire organized sector and initiated among the self-employed through voluntary community-based insurance.

The United States is the largest spender on health care services, reaching $1.9 trillion or 16 per cent of GDP in 2005 as compared to an average of 9 per cent for other industrialized countries. The United States relies on a system of licensing to control the supply and quality of health care services and each state has its own standards. According to the Wellness Council of America, more than 80 per cent of American companies with 50 or more employees have some form of preventive health care programmes for their employees. Kaiser Permanente, a large integrated managed care organization based in California, has created multidisciplinary teams comprising physicians, nurses, health educators, psychologists and linked these with the pharmacy, telephone advise and appointment centres and specialist clinics creating an integrated system from outpatient to inpatient care. The organization lays stress on prevention, patient education and self-management. This system has improved access, treatment and waiting time for patients. The Dallas Chamber Report (2006) also provides evidence of the benefits of corporate investment in preventive health care such that in the past decade, the annual return on investing a dollar on employee-wellness programmes yielded a return of $6. It was found

that well-designed worksite-wellness programs resulted in a 25 per cent decline in health costs, sick leave, disability pay and workers' compensation.

In industrialized countries, concerns regarding rising health care costs owing to the problem of ageing and high insurance charges, have prompted fears that an increasing number of jobs will be outsourced in the future. According to the Employment Policy Foundation in the United States, insurance premia have gone up dramatically, rising 87 per cent since 2000 and health coverage has become the most expensive benefit paid by the employers. Health care costs affect every level of the U.S. industry and particularly for multinational corporations that have to bear massive "legacy costs" for retired employees. For instance, General Motors spent $5.6 billion on health care expenditures for its 1.1 million employees in 2006 and that led to $1,500 being added to the price tag of every automobile. Such heavy burdens of health care expenses have the potential to break the back of not just a business enterprise but the economy as a whole. Since these costs can make operations in the United States prohibitive, it could lose its competitiveness regarding strategic location of businesses. In addition, countries like Australia and Singapore that are faced with rapidly ageing populations also have concerns about rising health care and lower productivity. This means that companies may shift their facilities to countries with less private expenses for health care like Canada where public funds pay up to 70 per cent of health care coverage. A large number of East Asian economies such as Hong Kong, Malaysia and Singapore also have a significant role of the state in the health care system.

There is little doubt that in the years to come, it is the quality of the labour force and cost of health care that are likely to be the major determining factors for competitiveness, both for businesses and economies. In order that the "demographic dividend" that India is currently enjoying owing to its young population, does not turn into a "demographic cliff," it is important for the country to not only maintain its replacement rate but also to ensure that the labour force remains healthy and productive. Herein lies the importance of preventive health care, since an efficient and productive workforce is likely to be the main driving force behind competition among companies and nations alike. Any nation aspiring for world leadership has no option but to implement standards that maintain the health and productivity of its citizens.

7 Conclusion and Policy Recommendations

It is increasingly being recognized that the healthier the population of a country, the greater its economic growth. A minimum level of physical and mental well-being is considered critical to attain high growth in the process of development. In India, the health care system is experiencing dramatic changes from what it was a few decades ago. While liberalization of the economy has expanded opportunities for employment and additional incomes, it has also brought with it urbanization and changes in lifestyles. These changes have had a profound impact on the epidemiology of diseases and health care demands of the people. The Indian health care system has the challenge to make available quality and affordable health care to a population that is growing from a billion

to a billion and a quarter in a decade. It has to equip itself to deal with life-threatening diseases that affect a large section of the underprivileged along with addressing lifestyle diseases that impact a large number of the relatively well off people. While one segment of the society is making the transition and has started getting treatment from superspeciality hospitals at exorbitant rates, a large section of the population still suffers in the hands of quacks and other substandard providers. Given this background, this report tries to suggest solutions for effective delivery of health care by stressing the importance of prevention through a system of vouchers issued by the employers for the benefit of employees to be used at their convenience.

With rising incomes and urbanization, modern lifestyles mean a compromise on quality time for healthy routines. It then becomes necessary that periodic health check-ups be done for early detection of risk factors and diseases. This is particularly true for "silent" diseases such as diabetes, obesity, hypertension, stress, high cholesterol and cardiovascular diseases that do not have any early symptoms and regular screening tests are the only way for early detection. All these diseases have the potential to seriously impair normal life and if left untreated, lead to complications and even death. The silver lining is that these diseases can be easily prevented and cured if detected early. Even slight modifications in lifestyles like eating responsibly, exercising, avoiding stress, and sleeping well can help in managing these diseases so that individuals can lead normal lives.

Indian companies like Infosys and Wipro have developed programmes for employee well-being. Infosys has started a programme for employee well-being in India and Australia called Health Assessment Lifestyle Enrichment (HALE) for reducing absenteeism and psychological stress. Similarly, Wipro runs a programme called *Mitr* (friend) to take care of the physical and emotional well-being of its employees in both the IT and the BPO businesses. Under this programme, some people were actually trained to counsel their colleagues at the workplace to counter stress in the office and at home. In fact, such initiatives have become important indicators of corporate social responsibility and this goes into building their image of a company that cares for its employees. Such wellness programmes are worthy of emulation. Based on the findings of the survey, it is recommended that the private sector should adopt the following health care measures for the employers: conduct health audit of all employees at regular intervals through preventive health check-ups depending on the job profile; follow-up with preventive check-up reports and counselling; organize preventive health care awareness camps; introduce schemes like vouchers that increase the purchasing power in the hands of employees, while ensuring that they are used for intended purposes. In fact, employees can be made to bear partial cost of curative treatment so as to encourage them to adopt a more healthy and preventive lifestyle.

It is ironical but good health is often taken for granted and is neglected as compared to other needs. The value of a healthy life is usually understood only when it is lost. People visit health care providers only when they are sick or injured but they also need to visit the physician when they are well for a preventive health care check-up. A majority of costly and disabling conditions can be prevented with proper intervention

and many of their complications can be avoided or at least delayed. Strategies for reducing the incidence of disease include early detection, increasing physical activity and reducing tobacco and alcohol consumption. The returns from the scarce resources available for health care can be maximized by diverting these resources towards prevention in order to delay complications. Expenditures on promoting healthy habits have benefits for households as well as the overall economy by increasing labour productivity, lowering absenteeism, raising household incomes and savings, lowering school dropout levels with positive impact on future earnings and capabilities, enhancing competitiveness by reducing health care expenditures of employees and enabling alternate consumption of education, nutrition, leisure for a good quality of life.

Health concerns can hamper the prosperity of a country if timely action is not taken, and thus the need for preventive health care. This is not surprising given that more than four-fifths of the parameters in the Human Development Index relate to health care. India is home to 16 per cent of the world population and 21 per cent of the world's diseases. However, the health care facilities remain grossly inadequate with a doctor to thousand population ratio of only 0.5 and just one bed per thousand population. This is very low compared to the figures for other developing and emerging economies of a doctor to thousand population of 1.5 and 4.3 beds per thousand population. Thus, there is an urgent need to address this dismal situation of inadequate access to health care facilities.

In order to maintain a healthy citizenry, the government should adopt a two-tier approach. At one level, the government has to step in to fulfill its traditional role of supplying public goods like clean drinking water, sanitation, nutrition and environmental protection. At the other level, the government should facilitate private intervention by giving incentives to the enterprises that promote health care through preventive measures. The government could provide direct subsidies to these companies or indirect subsidies in the form of tax exemptions. Section 17 of the Income Tax Act provides exemption for medical expenses up to Rs. 15,000 for employees. We recommend that this should be amended to include the whole range of preventive health care measures – health check-ups as well as expenses incurred in follow-up to these check-ups, i.e. lifestyle changes, stress-relieving techniques and counselling, gym, etc. The government needs to recognize preventive health care as an investment expenditure rather than as consumption expenditure since a company's earnings will be critically dependent on the quality of its labour force in the years to come. Income Tax exemption under section 80-D of the Income Tax Act is provided for insurance premium. Here too, provision for a similar exemption should be made for preventive health care measures.

Given the ageing problem faced by the industrialized countries, Indian enterprises have a competitive advantage in terms of their young, skilled and English-speaking labour force. But, in order to maintain that advantage, there has to be a public-private partnership since health matters cannot be left to the concern of health care providers alone. The highly skewed public health expenditure on curative care has meant lack of resources for preventive health care. The way forward is to forge mutually beneficial partnerships between the private sector, the government and the health care providers. One way is to finance preventive health care expenditures through a voucher system for check-ups and

health screenings. Rising expectations of a wealthier and well-informed society coupled with escalating health care demand necessitates the formulation of new mechanisms to make the health care industry a propeller of economic growth. The government can promote this voucher system by offering tax and other fiscal incentives to those employers who are willing to invest in preventive health care.

Business enterprises have an important stake in optimally using their health budget for minimizing absenteeism, reducing attrition, building team spirit and enhancing productivity. Improvements in health will not only improve the performance of the organization but will also translate into macro-economic gains through increases in income, consumption, savings and investments in the economy with feedback effects on better health outcomes and so the virtuous circle of a healthy populace will go on. Even small steps like health vouchers are as important as systemic overhaul and any change has the potential to create the foundation for success in the future.

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Annexure

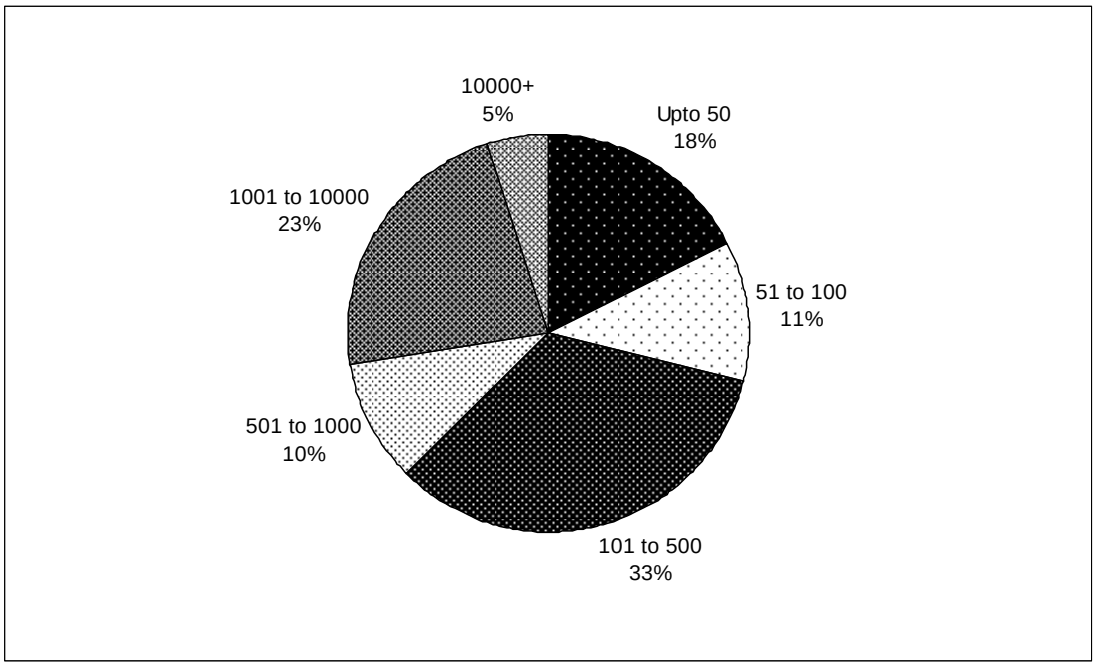
Company survey was carried out between March and June 2007. Initially, emails were sent out to the best-performing companies (based on sales figures for the most recent year available) in the *Prowess* database – 50 each from the manufacturing, banking services, financial services and services. Additionally, we obtained a database of 50 select IT and ITES companies, to whom we sent the survey emails.

In Prowess, designations / names and email addresses given were those of company heads, and not those of HR personnel. In some cases, these heads forwarded the emails to the HR, while many others did not, resulting in the questionnaire not reaching the right person(s). The database of IT and ITES companies had HR designations / names.

Since the email delivery failure rate was close to 80%, we decided to use larger, and more general, databases with nearly 11,000 entries. The probable causes for this were incorrect email addresses, email addresses given of people who were no longer employed with the company and emails blocked by the company server. However, the problem of delivery failure persisted with these databases, and, like Prowess, they also had the information on company heads, and not the HR personnel, with probably similar implications. Thus, a limitation of the study pertains to data availability and sample selection.

In the company survey, 57 per cent respondents (N=81) belonged to the manufacturing sector, 43 per cent to the service sector. In terms of company size, respondents ranged from very small (with 5 employees) to very large (with almost 74,000 employees).

Figure A1: Company Size - Number of Employees



Source: ICRIER Survey.

Geographically too, they were well-represented across 15 states of India in all regions. Respondents included well-known companies like Becton Dickinson, Cadila, Coca-Cola, E-convergence, Emami, Exide, Fidelity, Genpact, Godrej, HCL Comnet, i-flex, IL&FS, Infosys, Kirloskar, Medtronic, Mico BOSCH, Microland, Motorola, Nestle, Pepsico, POSCO, Satyam, Sun Life, Syntex, Tata Consultancy Services, Tata Steel, TeamLease and Textron.

Of the 81 responding companies, financial data from the *Prowess* database was available for 37 companies. A correlation analysis of preventive health care and its impact on profits and labour productivity was carried out for these companies. The analysis was carried out for all companies as well as sub-samples according to turnover: small companies with net sales less than Rs 100 crore numbering 14, medium companies with net sales between Rs 100 crore and Rs. 1,000 crore numbering 15 and large companies with net sales more than Rs 1,000 crore numbering 8. Profitability is measured as profits before tax. Absenteeism was measured by the proportion of employees on leave and mandays lost as the number of working days lost due to sick leave. A limitation of the study is the small sample size due to which the relationship between preventive health care and profitability could not be studied by using rigorous econometric tools.

For the employee survey, we did a one working week fieldtrip in Delhi and the National Capital Region. The research team focused on offices and factories in Gurgaon, Noida, Bhikaji Cama Place and Nehru Place, targeting a random sample of individual employees themselves to know about the benefits of preventive health care to them. Additionally, we sent out the survey to those who responded to our company survey, requesting them to forward it to at least some of their employees. The majority of the responses came through the field survey.

Employee respondents belonged to companies like Alcatel, American Express, Apollo Tyres, Bajaj, British Airways, Citibank, Convergys, Daewoo, E-convergence, Fugro, Gallium, Genpact, Gillette, Hero Honda, Hewlett Packard, IBM, IDEA, Larsen & Toubro, Maruti, McKinsey, Mico BOSCH, Microsoft, Nestle, Orange and Tata Consultancy Services.

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