

# Provision of health care for Bhopal survivors

*The provision of proper health care for the survivors of the Bhopal gas disaster has been constrained by inappropriate and sub-standard treatment in government hospitals. These problems are characteristic of the poverty-health scenario in India. Homi Katrak shows that the burden of health-care faced by the Bhopal survivors has been greater than that incurred by other low-income persons in India. This burden is exacerbated by a health legacy that means many forgo essentials which further lowers their standard of living.*

A quarter of a century after the night of the Bhopal Gas Disaster survivors must still campaign and fight for their unmet needs. Government hospitals have not provided low-cost and effective health-care for their continuing sicknesses. Employment generation schemes have been very limited and subject to bureaucratic interference. Survivors want access to better health care, low-cost medicines and greater opportunities for employment<sup>1,2</sup>. Since 2008 their demands have focused on achieving a commission in Bhopal to be established and empowered to deliver long-term medical, economic, social and environmental rehabilitation. Survivors also want the Government of India to initiate appropriate legal action against Union Carbide Corporation and Dow Chemical Company.

This paper focuses on the issues of health-care. About 150,000 survivors are

still chronically ill and nearly 60% can do no more than four hours continuous work. Mortality rates in the gas-affected areas have been higher than in other areas of Bhopal city<sup>3</sup>. Residents in extensive areas around the now-derelict factory continue to be poisoned as a result of chemicals which have been stored on, and released from, the site and which have contaminated drinking water extracted from wells.

The neglect of health-care has two aspects. There was a failure to anticipate the need for care in the event of an industrial disaster<sup>4</sup>. More disastrous have been the shortcomings in care provided after the event. The state has made little effort to monitor the health record of the survivors and has not attempted a proper understanding of their health problems<sup>5</sup>.

The costs of medicines provided by government hospitals have been very high,

particularly in comparison to an all-India benchmark. The benchmark used here is the medical expenditures of the poor and marginal (PM) persons: an estimated 831 million in 2004-05 – over four-fifths of the total population<sup>6</sup>. This paper undertakes simple comparisons between the expenditures of the survivors and PM persons. Calculations suggest that some of the Bhopal survivors may have had to cut back expenditures on other essential items to pay for health-care.

The paper sets out the shortcomings of the Medical Rehabilitation programme implemented by the Madhya Pradesh state government for the gas survivors; discusses aspects of health-care for low-income households in India; evaluates the burden of health-care faced by the survivors, relative to that of the PM persons; and reports on the health-care provided by an NGO for the survivors.

## Medical rehabilitation provided by the state government

Shortly after the night of the gas disaster the government of Madhya Pradesh state (of which Bhopal is the capital) set up the Bhopal Gas Tragedy Relief and Rehabilitation Department (BGTRRD). The purpose was to arrange medical, economic and social rehabilitation for the survivors. The BGTRRD has built up a large network of hospitals and installed the physical inputs for a health service. Detailed information is reported on its website<sup>7</sup>. However there are four main aspects of concern.

Firstly, although there is no shortage of government hospitals, there are problems of access, particularly to the Bhopal memorial hospital which is located far from the areas where the worst affected survivors live. Low-income survivors cannot easily afford the costs of transport.

Secondly, the illnesses suffered have not been properly diagnosed and medicines not correctly prescribed. Treatment has not been based on specific pathologies and medicines have been prescribed for non-specific symptoms.

Thirdly, the stock of medicines kept by the Madhya Pradesh Gas Relief Department has been found to be substandard and/or past the expiry date. The Sambhavna Trust in Bhopal found that only about 18% of the medicines would have good therapeutic value. The remaining 82% were useless and/or harmful<sup>8</sup>. In 2006 a leading national newspaper reported that the Supreme Court had directed the state government to periodically send samples of the medicines for testing to reputable laboratories but (until that time) this had not been done<sup>9</sup>.

Fourthly, there is very little provision of low-cost and effective treatment and medicines. At the only cancer hospital in the city, gas affected people with incomes below Rs. 160,000/- per year are entitled to free cancer care. In the six hospitals and



People affected by the gas or suffering from illnesses caused by contaminated water receive free treatment at the Sambhavna Clinic.

Photo: David Graham

nine dispensaries run by the government gas affected people are entitled to free care. This includes free medicines but often they are not given all the medicines they require. The most common experience is to be prescribed four drugs, be given two or three and required to buy the remainder from the market<sup>10</sup>. A 2002 report in the Times of India suggested that government hospitals give free medicines only to those who 'know people'<sup>11</sup>. ('Knowing people' could depend on a survivor's connections, status, caste, etc.) Even then, the compensation received from the Indian government is barely enough to cover the survivors' medical bills<sup>12</sup>. One report gives some indication of the medical expenditures incurred by the survivors. The Bhopal Group for Information and Action estimated that about two-thirds of low-income survivors spend more than 20% of their incomes on medicines and another 25% spend more than half of their income<sup>13</sup>. This means that as many as (66% + 25%), i.e. 91% of the survivors were incurring high expenditures. At most, 9% of survivors received all prescribed medicines free of charge. Additionally, survivors must pay for treatment, doctors' fees, transport and other expenses.

These estimates can be used to calculate a weighted average of the expenditures, covering all survivors. Each level of expenditures reported above is now weighted by the percentage of households incurring those expenditures. Thus our weighted average is:  $[(20\%)(66/100) + (50\%)(25/100) + (0.0\%)(9/100)] = 25.8$  per cent. In other words the survivors' average expenditures on medicines amounted to 25.8 per cent of their income.

**Aspects of health-care for low-income households in India**

The government's 'medical rehabilitation' is now compared to the larger all-India picture of poverty and health-care, with three main comparisons: the provision of free medicines; the quality of medicines; and



A member of staff making ayurvedic medicines at the Sambhavna Clinic that provides ongoing treatment to those affected by the disaster  
Photo: David Graham

the burden of health-care. Firstly in Bhopal the free treatment and medicines available in government hospitals were provided only to cancer patients and to those whose incomes are below the official estimate of the poverty line (BPL). This compares poorly with the neighboring state of Rajasthan where government hospitals provide free treatment and medicines to BPL patients for various serious sicknesses.

Moreover, some patients that are above the poverty line are given partial relief from full payment<sup>14</sup>.

Furthermore the official BPL measure tends to underestimate the real extent of poverty as it is based on the level of income required to purchase food and some other essentials but does not allow for expenditures on medicines and education<sup>15</sup>. If expenditure on the latter two items were taken into account the poverty line would have to be drawn significantly higher, and in Madhya Pradesh state would be as much as 17% above the official level. This suggests that the Bhopal hospitals' reliance on the official BPL will exclude many survivors who are too poor to purchase medicines.

The second comparison is the poor quality of medicines. As noted above, 82% of medicines prescribed to survivors were sub-standard and/or past their expiry date, or potentially harmful (collectively known as 'irrational drugs'). A 2007 paper comparing all-India studies suggests that about 10 per cent of medicines are of poor quality, or irrational prescriptions<sup>16</sup>. If these figures are correct, the incidence of poor quality medicines given to the Bhopal survivors has been 8.2 times higher than that for all other persons in India. A more detailed 1998 study in Maharashtra found a signifi-

**Table 1. Expenditure of low-income groups and estimates for Bhopal survivors (%)\***

Expenditures per population group	Medical	Durables**	Education	Essential non-food	Food***
Extremely poor and poor	3.5	11.8	19.5	19.5	63.3
Bhopal survivors****	25.8	Nil	Nil	10.9	63.3
Marginal and vulnerable	4.8	15.4	3.1	18.2	58.5
Bhopal survivors	25.8	Nil	Nil	15.7	58.5

\* The figures for each item are the percentages of total household expenditures. The data is from Sengupta et al. (2008) and is for the year 2004-05.

\*\* This group includes also all other non-essential non-food items.

\*\*\* The share of food expenditures is assumed to be the same as that of the paired low-income groups.

\*\*\*\*The percentage share of medical expenditures was estimated in section 'medical rehabilitation provided by state government'.

cantly worse situation in this major state with one in five prescriptions including a harmful drug<sup>17</sup>, but even this would put Bhopal survivors in a worse position than the national average.

The third comparison pertains to the burden of medical expenditures. If the assumption is correct that survivors' expenditures are about 25.8% of their incomes, this compares with an average for medical expenditures of all PM households in India of 4.6% of income. This means that the burden of medical expenditures for the Bhopal Gas survivors (relative to their incomes) is  $(25.8)/(4.6) = 5.6$  times greater than that of all the PM households<sup>18</sup>.

Admittedly the burden for the gas survivors was calculated with only a few observations and may have caused a bias in the comparisons. However, even large errors are unlikely to affect the overall picture. For instance if the survivors' expenses had been overstated by 50% their burden of medical expenditures would still be  $5.6/2 = 2.8$  times greater than that of the PM households.

### The burden of medical expenditures

Many low-income persons in India have neither sufficient savings to draw upon nor access to a health insurance system<sup>19</sup>. Moreover, their expenditures on non-essential items, such as durable goods, are just a small part of their overall expenditures. Consequently medical expenditures often have to be met by reducing purchases of other essential items. The impact of medical expenditures on purchases of such items provides a useful indicator of the 'burden of medical expenditures'.

Income differences have a particular significance in the Bhopal context as they arise partly as a consequence of the gas disaster. Those whose health has been more seriously affected are less able to work and so have lower incomes. The Fact Finding Mission of Bhopal, 1999-2004, reported that nearly one-half of the population could not continue in their earlier employment<sup>20</sup>.

Table 1 compares the likely burden facing the Bhopal survivors with the actual expenditure profiles of two low-income groups: the 'extremely poor and poor' and the 'marginal and vulnerable'. The former have relatively lower incomes. The table shows the actual expenditure profile of the two low-income groups and the estimated burden facing the Bhopal survivors. Among the 'extremely poor and poor group' medical expenditures account for only 3.5% of their total expenses. Moreover, they are just about one-quarter of their combined expenditures on durables and education. The Bhopal survivors' medical expenses are 25.8 per cent of the total, as estimated above, which exceeds the expenditure on durables and education of the extremely poor and poor.

The implication of the above result is that if the survivors' incomes were equal to

those of the extremely poor and poor, their high medical expenditures may have caused a significant cut back in their expenditures on durables and education and also some decrease in expenditures on essential non-food items. In comparing their expenditures with those of marginal and vulnerable populations, the survivors' expenditures on medicine exceed even this group's combined expenditure on durables and education. The survivors may have had to make a marked cut back in expenses on durables and education, and also some decrease in expenses on the essential non-food items.

### Health care provided by an NGO in Bhopal

A health NGO in Bhopal has been making a significant contribution to help survivors. The Sambhavna Clinic was set up in 1995 with the support of a United Kingdom based charity, the Bhopal Medical Appeal<sup>21</sup>. It has developed effective treatment combining conventional and traditional Indian medicines. In the first thirteen years of its operations Sambhavna has registered over 23,000 survivors and persons exposed to contaminated ground water for long term free medical care<sup>22</sup>.

The benefits of free medicines and treatment are, at least two-fold: a saving in expenditures and better health. The nature and extent of these benefits could differ between different income groups. Some of the relatively higher-income survivors that had been able to purchase their medicines, from other suppliers, would now have a saving in expenditures. They would thus be able to increase expenditures on, say, durables and/or education. In comparison low-income survivors, who make up the majority of those treated at Sambhavna, may not have been able to afford all (or any) of their required medicines and they now receive proper medical treatment. The resulting improved health may enable some of those treated at Sambhavna to undertake full or part time employment.

### Conclusion

There has been a marked lack of proper care for survivors of the Bhopal gas disaster in government hospitals. The survivors have incurred high expenditures for inappropriate treatment and medicines. The provision of free medicines and care in the government hospitals has been very limited and the incidence of sub-standard and/or expired medicines is higher than the all-India average. The share of the survivors' medical expenditures, in their total expenditures, could be as much as five times greater than that for other low-income persons in India. This high burden of medical expenditure may have caused survivors to cut back their expenses on durables and education.

There is clearly a great need for better health care. An important contribution is the work of the Sambhavna Clinic, which

has developed know-how and medicines relevant for the survivors' illnesses and provides free treatment and medicines. The scale of its operations needs to be greatly expanded. Additional funds would be required to enable Sambhavna to do so.

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