

GROWTH OF HEALTH CARE SERVICES IN PUNJAB

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Abstract

The present paper examined the growth of health care services in terms of pattern of public expenditure, health infrastructural facilities, manpower growth and other health related services in Punjab during 1970-71 to 2006-07. For this purpose, the secondary data have been used and collected from both published/unpublished government sources and such other research organizations that are dealing with health related statistics and problems. The study clearly found that the public investment incurred on both social and economic services particularly during the 1970s and up to the end of 1980s in Punjab led to a remarkable improvements in the availability of health care institutions and supporting infrastructure in the state. But, after that public investment particularly in health sector slowed down rapidly. As a result, public health care institutions did not function well, but began to deteriorate. On the other hand, number of additional beds provided in hospitals and other health institutions were inadequate compared to rising population in the state during the period under consideration.

Key Words: Public expenditure, health care infrastructure, manpower development, health indicators, safe drinking water etc.

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Introduction

Many empirical studies suggest that the contribution of health care services to enhance human capital, economic welfare and development is substantial (Fuchs, 1966; and World Bank, 1993). Public investment in health services will certainly raise people's capacity to do more work and higher earnings on the one hand, and reduce their sufferings from ill-health on the other hand. The knowledge that the ill-health of workforce causes severe loss of output and productivity whereas the good health raises the level of productivity and output highlight the significance of proper planning and growth of health services in the developing countries (CMH, 2001). And, public and private expenditures for achieving good health are considered to be the most important component of investment for enhancing human capital. Actually, when people are healthy, their mental horizon will be widened, they will live longer, and they lead an active and enthusiastic life. With these results, they continue to improve quantity and quality of material production in a country. These countries will certainly develop at the faster rate and their people will be benefited as their health status and standard of living will be raised (Gopal, 1987).

Importance and Methodology of Study

Public expenditure on health services is an important catalyst of a wide-ranging development of an economy on the one hand, and may lead to a favourable redistribution of income and equalization of opportunities among different sections of the society particularly the poor on the other (Singh, 1991). The developed western countries of world spend a substantial portion of their public expenditure on health services. For example, United States, Australia, Switzerland and United Kingdom spend between 14 percent and 20 percent of their total income on public health services. And, many Asian countries like Bhutan, Maldives, Thailand, Sri-Lanka and Malaysia also spend 6 to 10 percent, while India spends considerably a low amount around 1.5 percent of the total state income as public health expenditure (Planning Commission, 2003). The recent researches also show that the developing countries are investing heavily on social sector programmes, namely health, fertility control and education services (Walle and Nead, 1995).

The present research work is entirely based on the secondary data. The secondary data have been collected from both published/unpublished government sources and such other research organizations that are dealing with health related statistics and problems for the time

period from 1970 to 2007. For adequate interpretation of the data and different aspects of health services, simple statistical tools such as the percentages, ratios, averages, trend growth rates have been used. The present paper made an attempt to examine the growth of health services in Punjab during 1970-71 to 2006-07. For this purpose, the entire paper has been divided into four sections. Section I deals with the introduction, importance and methodology of the study. Section II analyses the growth of health care services mainly in terms of pattern of public expenditure in Punjab. Section III deals with the health infrastructural facilities, manpower growth and other health related services in Punjab. The main conclusions are summarized in the last Section IV.

II

GROWTH OF PUBLIC EXPENDITURE IN PUNJAB

At present, main concern of Indian states is not only to provide adequate health care services to all people, but also to secure an adequate and acceptable level of health status for all citizens. Since the health services are competing with other services in terms of allocation of public funds, it is interesting to examine the pattern of public expenditure to find out priority services of the state of Punjab.

2.1 Public Expenditure on Revenue and Capital Account

Table 1.1 highlights the growth of public expenditure on revenue and capital accounts in Punjab. The total receipts under revenue account increased from Rs. 1,91,562 lakh in 1972-73 to Rs. 15,55,406 lakh in 2006-07 and the total expenditure on revenue accounts increased from Rs. 1,67,973 lakh in 1972-73 to Rs. 14,02,388 lakh in 2006-07. The state was always having a surplus on revenue account upto the period of 1985-86, except during the year 1984-85. But after

Table 1.1: Receipts and Expenditure on Revenue Account and Capital Account in Punjab
(At Constant Prices = 1999-00)

(Rs. in lakh)

Year	Revenue account			Capital account		
	Receipts	Expenditure	Surplus (+)/ Deficit(-)	Receipts	Disbursements	Surplus (+)/ Deficit(-)
1972-73	191562	167973	(+)23589	1598	22755	(-)21156
1975-76	201009	181955	(+)19054	6486	23559	(-)17073
1980-81	275568	266767	(+)8801	28297	37894	(-)9597

1985-86	401114	398598	(+)2516	115799	97660	(+)18139
1990-91	429053	547217	(-)118164	283595	160712	(+)122883
1995-96	676163	734875	(-)58712	217079	126268	(+)90810
1999-00	746786	1019498	(-)272712	320890	57597	(+)263293
2000-01	899747	1123893	(-)224146	405384	162611	(+)242773
2001-02	823519	1172271	(-)348753	530390	189089	(+)341301
2002-03	1002358	1342231	(-)339873	407565	68732	(+)338833
2003-04	1060885	1372270	(-)311385	428809	124296	(+)304513
2004-05	1168835	1455853	(-)287018	367855	72649	(+)295206
2005-06	1332376	1429773	(-)97397	202708	121750	(+)80957
2006-07	1555406	1402388	(+)153018	372747	229208	(+)143539

Source: Economic and Statistical Organization, *Statistical Abstract of Punjab*, various issues, Government of Punjab

1985-86, there had always been a deficit on revenue account upto the period of 2005-06. Receipts and expenditure on capital account also constituted an important fiscal instrument to affect the transfer of resources, though their effects on economy were expected to be felt comparatively over a long period of time. Capital receipts, in absence of revenue surplus budgets, are largely financed by the loans. The data revealed that capital receipts in Punjab were always found to be unstable and capital expenditure had a general tendency to rise. For instance, total capital expenditure increased from Rs. 22,755 lakh in 1972-73 to Rs. 2,29,208 lakh in 2006-07. Total capital receipts increased from just Rs. 1,598 lakh to Rs. 3,72,747 lakh, largely financed by taking loans, during the same period. The capital budget was in deficit upto the period of 1986-87, except during the years of 1983-84 and 1985-86. After 1986-87, the capital budget had shown surpluses up to 2006-07.

2.2 Pattern of Public Expenditure in Punjab

Public expenditure on revenue account consisted of two components: development and non-development. Development expenditure includes expenditure on economic, social and community services provided to the people in the state, while non-development expenditure is mainly incurred on administrative and debt services. These social and community services provided by the state not only contribute to the welfare of the people, but some of them

particularly education and health (including family welfare) services improve the quality of human beings and, hence, term as an investment in man.

The data on pattern of development expenditure on revenue account in Punjab (Table 1.2) revealed that total expenditure increased from Rs. 1,67,973 lakh in 1972-73 to Rs. 14,02,388 lakh in 2006-07; growing at the rate of 7.42 percent per annum. Whereas, development expenditure increased at the rate of 5.09 percent per annum, the corresponding growth rate for non- development expenditure was 10.62 percent per annum. Dividing the period into two parts (1972-73 to 1989-90 and 1990-91 to 2006-07), growth rate in development expenditure slowed down to 3.50 percent per annum during 1990-91 to 2006-07 compared to 6.70 percent per annum during 1972-73 to 1989-90. On the other hand, growth rate in non-development expenditure decreased from 9.75 percent per annum during 1972-73 to 1989-90 compared to 9.56 percent per annum during 1990-91 to 2006-07. Thus, growth rate in non-development expenditure was found to be higher than that of development expenditure, particularly after the post reform period, i.e., 1990-91 to 2006-07.

Table 1.2: Pattern of Public Expenditure in Punjab on Revenue Account (At Constant Prices=1999-00)
(Rs. in lakh)

Year	Development Expenditure	Non-development Expenditure	Total Expenditure
1972-73	121843 (72.54)	46130 (27.46)	167973 (100.00)
1975-76	131286 (72.15)	50676 (27.85)	181962 (100.00)
1980-81	191868 (71.92)	74899 (28.08)	266767 (100.00)
1985-86	265024 (66.49)	133575 (33.51)	398599 (100.00)
1990-91	345133 (63.07)	202106 (36.93)	547239 (100.00)
1995-96	320829 (43.66)	414046 (56.34)	734875 (100.00)
1999-00	445964	573534	1019498

	(43.74)	(56.26)	(100.00)
2000-01	474737 (42.24)	649156 (57.76)	1123893 (100.00)
2001-02	445234 (37.98)	727037 (62.02)	1172271 (100.00)
2002-03	490822 (36.57)	851409 (63.43)	1342231 (100.00)
2003-04	558114 (40.67)	814157 (59.33)	1372270 (100.00)
2004-05	640675 (44.01)	815178 (55.99)	1455853 (100.00)
2005-06	551324 (38.56)	878449 (61.44)	1429773 (100.00)
2006-07	590665 (42.12)	811724 (57.88)	1402388 (100.00)
Growth Rate Per Annum (percent)			
1972-73 to 2006-07	5.09	10.62	7.42
1972-73 to 1989-90	6.70	9.75	7.65
1990-91 to 2006-07	3.50	9.56	6.32

Source: Economic and Statistical Organization, *Statistical Abstract of Punjab*, various issues, Government of Punjab

2.3 Pattern of Development Expenditure in Punjab

An analysis of pattern of development expenditure is also necessary because the health sector has found to be competing within social services and social services competing with economic services in terms of allocation of public resources. The data in Table 1.3 showed that the percentage share of public expenditure on social services constituted a top priority in the total development expenditure on revenue account as compared to economic services. For example, all social services shared 53.83 percent of development expenditure in 1972-73, which rose to 66.35 percent in 2003-04 and then decreased to 52.54 percent in 2006-07. In absolute terms, it was Rs. 3,10,346 lakh in 2006-07 on social services compared to Rs. 2,80,318 lakh on economic services.

Education sector, being a core sector for achieving the better human resources, brings out the much-needed changes in the socio-economic environment leading to the overall progress of the state. Expenditure on education sector has increased from Rs. 35,299 lakh in 1972-73 to Rs. 1,75,320 lakh in 2006-07 with a growth rate of 5.42 percent per annum. And, health services remained an important constituent of Punjab's development expenditure up to the mid-1980s. The share of expenditure on health services increased from 11.6 percent in 1972-73 to 14.19 percent in 1985-86. Thereafter, it declined to 8.82 percent in 2006-07. In terms of trend growth rate, expenditure on health sector had experienced a declining trend especially after the year 1989-90. For example, expenditure on health sector grew at the rate of 6.23 percent per annum during 1972-73 to 1989-90, but declined to 4.54 percent per annum during 1990-91 to 2006-07.

Punjab's economy is mainly an agriculture-oriented economy and enjoyed an enviable position among the Indian states in terms of per hectare yield of major crops (Gill and Ghuman, 2000). However, proportionate share of public expenditure on agriculture decreased from 12.6 percent in 1972-73 to 6.07 percent in 2006-07. This trend will seriously hamper the future development process of the state. Similarly, public expenditure on water and power in Punjab has increased, in absolute terms, from Rs. 13,779 lakh in 1972-73 to Rs. 1,47,236 lakh in 2006-07 with a growth rate of 8.47 percent per annum. However, the growth rate was the maximum (9.12 percent per annum) during 1972-73 to 1989-90, compared to during 1990-91 to 2006-07 (8.82 percent per annum).

Transport and communication sector is another sector where the public expenditure, in relative terms, decreased from 18.78 percent in 1972-73 to 7.07 percent in 2006-07. State expenditure on industry and minerals in Punjab does not appear to be marked in the total development expenditure. As the percentage share, state expenditure on industry and minerals increased marginally from 1.56 percent in 1972-73 to 1.77 percent in 2006-07. One can safely conclude from the analysis of data presented in Table 1.3 that public expenditure on most of social (including health services) and economic services experienced a declining growth rate after the post reform period of 1990-91. The percent share of expenditure on health services has not increased, whilst it has decreased from 14.26 percent during 1975-76 (Rs. 18,721 lakh) to 8.82 percent (Rs. 52,108 lakh) during 2006-07.

Table 1.3: Pattern of Development Expenditure on Revenue Account in Punjab (At Constant Prices=1999-00) (Rs. in lakh)

Year	Education Art and Culture	Health Care and Family Welfare	Housing and Urban Development	Other Social Services	Total	General Economic Services	Agricultural and Allied Services	Water and Power Development	Transport and Communication	Industry and Minerals	Total	Grand Total
1972-73	35299 (28.97)	14134 (11.60)	817 (0.67)	15341 (12.59)	65591 (53.83)	2335 (1.92)	15350 (12.60)	13779 (11.31)	22888 (18.78)	1900 (1.56)	56251 (46.17)	121843 (100.00)
1975-76	42384 (32.28)	18721 (14.26)	1072 (0.82)	10377 (7.90)	72548 (55.26)	2027 (1.54)	22677 (17.27)	9540 (7.27)	22166 (16.88)	2328 (1.77)	58731 (44.74)	131286 (100.00)
1980-81	86249 (44.95)	23743 (12.37)	1432 (0.75)	19068 (9.94)	111075 (57.89)	3330 (1.74)	26418 (13.77)	17146 (8.94)	31501 (16.42)	2403 (1.25)	80793 (42.11)	191868 (100.00)
1985-86	81012 (30.57)	37615 (14.19)	1056 (0.40)	46081 (17.39)	165763 (62.55)	2451 (0.92)	34132 (12.88)	27414 (10.34)	31551 (11.91)	3709 (1.40)	99264 (37.45)	265024 (100.00)
1990-91	111291 (32.25)	36115 (10.46)	10702 (3.10)	32547 (9.43)	192826 (55.87)	57645 (16.70)	33057 (9.58)	27387 (7.94)	33431 (9.69)	2960 (0.86)	154479 (44.76)	345133 (100.00)
1995-96	116781 (36.40)	33497 (10.44)	14270 (4.45)	37138 (11.58)	201685 (62.86)	15702 (4.89)	34489 (10.75)	24613 (7.67)	39767 (12.40)	4574 (1.43)	119144 (37.14)	320829 (100.00)
1999-00	180499 (40.47)	54456 (12.21)	13469 (3.02)	18539 (4.16)	266963 (59.86)	25621 (5.75)	33937 (7.61)	69817 (15.66)	45810 (10.27)	3816 (0.86)	179001 (40.14)	445964 (100.00)
2000-01	178375 (37.57)	61179 (12.89)	16077 (3.39)	25426 (5.36)	281057 (59.20)	16658 (3.51)	42997 (9.06)	88352 (18.61)	42934 (9.04)	2739 (0.58)	193680 (40.80)	474737 (100.00)
2001-02	168999 (37.96)	57016 (12.81)	18436 (4.14)	35999 (8.09)	280449 (62.99)	14943 (3.36)	38776 (8.71)	71619 (16.09)	37337 (8.39)	2109 (0.47)	164785 (37.01)	445234 (100.00)
2002-03	189390	55259	21820	18805	285273	20251	38955	100658	43638	2047	205548	490822

	(38.59)	(11.26)	(4.45)	(3.83)	(58.12)	(4.13)	(7.94)	(20.51)	(8.89)	(0.42)	(41.88)	(100.00)
2003-04	209339 (37.51)	63760 (11.42)	22970 (4.12)	74239 (13.30)	370308 (66.35)	28144 (5.04)	43372 (7.77)	86706 (15.54)	27468 (4.92)	2117 (0.38)	187806 (33.65)	558114 (100.00)
2004-05	200936 (31.36)	64532 (10.07)	16722 (2.61)	58724 (9.17)	340914 (53.21)	20958 (3.27)	48866 (7.63)	200643 (31.32)	26910 (4.20)	2384 (0.37)	299761 (46.79)	640675 (100.00)
2005-06	179762 (32.61)	54645 (9.91)	16276 (2.95)	32343 (5.87)	283027 (51.34)	47833 (8.68)	38269 (6.94)	148851 (27.00)	27761 (5.04)	5583 (1.01)	268297 (48.66)	551324 (100.00)
2006-07	175320 (29.68)	52108 (8.82)	26191 (4.43)	56728 (9.60)	310346 (52.54)	45025 (7.62)	35826 (6.07)	147236 (24.93)	41784 (7.07)	10447 (1.77)	280318 (47.46)	590665 (100.00)
Growth Rate Per Annum (Percent)												
1972-73 to 2006-07	5.42	4.35	11.34	2.93	5.05	10.38	2.63	8.47	1.46	2.04	5.05	5.09
1972-73 to 1989-90	7.50	6.23	17.77	6.87	7.69	2.33	4.64	9.12	2.80	5.53	5.17	6.70
1990-91 to 2006-07	4.74	4.54	4.76	5.46	4.83	-2.94	1.72	8.82	-0.47	0.31	2.32	3.50

Note: 1. Figures in parentheses are the percentages.

2. From 1986-87 onwards the expenditure on other social services includes labour and labour welfare, social welfare and nutrition. Expenditure on power development includes irrigation & flood control and energy.

Source: Economic and Statistical Organization, *Statistical Abstract of Punjab*, various issues, Government of Punjab.

III

GROWTH OF HEALTH CARE SERVICES IN PUNJAB**3.1 Growth of Public Health Infrastructure in Punjab**

In Punjab, public health services are provided and managed through the network of medical hospitals, district hospitals, tehsil hospitals, rural hospitals, CHCs/PHCs and dispensaries. Since 1971, Punjab has made rapid strides in the promotion of health related infrastructure in the state. For instance, the total number of health institutions rose from 536 in 1971 to 2228 in 2007; growing at the rate of 3.39 percent per annum (Table 1.4). Comparing across two periods, i.e. 1971-1990 and 1991-2007, it revealed that there was a considerable growth in the number of health institutions during the 1971-1990; growing at the rate of 8.82 percent per annum whereas it was only 0.07 percent per annum during 1991-2007. There was hardly any increase in the number of health institutions since 1991 because after that only CHCs were set up in Punjab due to the policy of the Government of India (Planning Commission, 2003).

Further, a large number of health institutions began to establish in rural areas of Punjab. For instance, the proportion of rural hospitals rose from 9.02 percent in 1971 to 40.18 percent in 1991. And, thereafter the share of rural hospitals decreased consistently to 33.33 percent in 2007. The proportion of rurally located dispensaries showed an impressive improvement (64.24 percent in 1971 to 84.79 percent in 1991) largely due to the policy of central and state governments under which liberal allocation of funds were made to states' rural health sectors under the Minimum Needs Programme implemented since the Fifth Five Year Plan (1974-79). However, after the introduction of new economic policy in India, public funds began to curtail to the health sector. Consequently, the proportion of rural dispensaries decreased marginally from 84.79 percent in 1991 to 83.01 percent in 2007. And, this decrease in proportion of rurally located dispensaries in Punjab was perhaps due to the up-gradation of many rural dispensaries into CHCs/PHCs during the period of 1984-2000 (Singh, 2005).

Further, population served per institution also confirmed a very slow increase in the number of public health institutions compared to the corresponding growth in the population of state. For example, population served per hospital was 1.11 lakh in 1971 and 1.07 lakh in 1976; it decreased to 0.67 lakh in 1981, rose to 0.69 lakh in 1986, 0.92 lakh in 1991 and 1.23 lakh in 2007, which shows the inadequacy of the growth of hospitals in Punjab. In the case of PHCs,

population served per PHC decreased from 1.07 lakh in 1971 to 0.45 lakh in 1991 because a large number of new PHCs were set up in the state between 1986 and 1991. Still, Punjab state is nowhere near the norm set up by the central government in terms of population served per PHC i.e. one PHC for every 30,000 population. Population served per dispensary came down from 0.46 lakh to 0.13 lakh during the period from 1971 to 1991. After 1991 onwards, population served per dispensary also increased to 0.18 lakh in 2007 because many rural dispensaries established earlier were upgraded to the status of PHC since 1987. Regarding the CHCs which were proposed to be established as per norm of one CHC for every one lakh of population since December 1989, it is stated that Punjab state is still very far away to achieve this goal because the population served per CHC was 2.89 lakh in 1991 which came down to just 2.38 lakh in 2007.

Table 1.4: Growth of Public Health Care Infrastructure in Punjab

Year	All Types of Institutions					Population Served Per Institution					Population Served Per Bed			
	Allopathic					Non-A	Allopathic				Non-A	Per Bed		
	H	PHC	D	CHCs	Total	H & D	H	PHC	D	CHCs	H & D	Total	Rural	Urban
1971	122 (9.02)	126 (88.89)	288 (64.24)	-	536 (57.46)	269	1.11	1.07	0.46	-	0.50	1372	5341	405
1976	140 (12.86)	128 (89.06)	580 (78.62)	-	848 (69.34)	419	1.07	1.17	0.26	-	0.36	1196	4527	383
1981	254 (43.31)	129 (85.27)	1485 (86.80)	-	1868 (80.78)	521	0.67	1.30	0.11	-	0.32	816	1377	396
1986	266 (43.23)	130 (85.38)	1791 (87.66)	-	2187 (82.12)	584	0.69	1.41	0.10	-	0.32	809	1268	423
1991	219 (40.18)	442 (94.80)	1473 (84.79)	70 (61.43)	2204 (81.62)	634	0.92	0.45	0.13	2.89	0.32	839	1335	445
1996	208 (35.10)	446 (94.62)	1470 (82.99)	104 (57.69)	2228 (79.67)	636	1.06	0.49	0.15	2.13	0.35	887	1424	490
2000	207 (34.78)	440 (95.00)	1465 (83.07)	107 (58.97)	2219 (79.68)	635	1.15	0.54	0.15	2.04	0.38	939	1463	549
2001	207 (35.27)	440 (95.00)	1465 (83.07)	117 (58.97)	2229 (79.72)	635	1.17	0.55	0.16	2.08	0.38	958	1481	568
2002	220	441	1482	103	2246	635	1.12	0.56	0.16	2.40	0.38	974	1505	583

	(33.18)	(94.33)	(82.52)	(62.14)	(79.07)									
2003	219 (33.33)	441 (94.33)	1479 (82.56)	103 (62.14)	2242 (79.13)	636	1.15	0.57	0.17	2.44	0.39	997	1528	604
2004	219 (33.33)	441 (94.33)	1479 (82.56)	103 (62.14)	2242 (79.13)	636	1.17	0.58	0.17	2.49	0.40	1019	1560	624
2005	219 (33.33)	441 (94.33)	1479 (82.56)	103 (62.14)	2242 (79.13)	636	1.19	0.59	0.17	2.54	0.41	1038	1578	644
2006	219 (33.33)	441 (94.33)	1453 (83.55)	112 (60.71)	2225 (79.60)	636	1.21	0.60	0.18	2.38	0.42	1045	1581	656
2007	219 (33.33)	441 (94.33)	1454 (83.01)	114 (59.65)	2228 (79.17)	636	1.23	0.61	0.18	2.38	0.43	1065	1600	677
Growth Rate Per Annum (Percent)														
1971-2007	1.15	5.12	3.25	-	3.39	1.90								
1971-1990	4.94	4.46	10.45	-	8.82	4.14								
1991-2007	0.36	-0.03	-0.00	1.12	0.07	0.00								

Non-A means non-allopathic which includes Ayurvedic, Unani and Homeopathic.

H= Hospital, D= Dispensary, PHC= Primary Health Centres, CHC= Community Health Centres.

Note: Figures in parentheses are percent share of rural areas.

Source: *Health Information of Punjab* (earlier Health Statistics of Punjab), Directorate of Health and Family Welfare, Punjab, Chandigarh (various issues)

On the other side, less importance was given to the development of health care institutions in Punjab under the alternative systems of medicine, popularly known as Indian systems of medicine and homeopathy. The figures show that number of these institutions increased from 269 in 1971 to 636 in 2007; growing at the rate of 1.90 percent per annum. The major growth of these health institutions took place during the 1971-1990, as the growth rate was 4.14 percent per annum compared to no growth during the 1991-2007. The data clearly reflect that after 1991 onwards, no effort was made to develop Indian system of medicines and homeopathy as the number of institutions belonged to these systems remained static. As a result, population served per health institution under these systems decreased from 0.50 lakh in 1971 to 0.32 lakh in 1991 which rose to 0.43 lakh in 2007.

Theoretically, strength of health care facilities prevalent in the state depends largely upon the number of beds available for indoor treatment in these institutions and population served per bed. An analysis of data on beds highlighted that population served per bed in Punjab did not show any improvement. Besides, there were huge differences between rural and urban areas regarding population served per bed in the state. The population served per bed in rural areas of Punjab showed a sharp improvement. For example, there was one bed for every 5341 rural people in 1971 and this ratio decreased to 1335 rural people in 1991. After that, there was no improvement in this ratio because the number of rural beds did not increase at the rate at which rural population was growing. On the other hand, it was also true that population served per bed in urban areas, although low compared to rural areas, but also increased from 405 persons in 1971 to 677 persons in 2007. It shows the inadequacy of increase in the number of urban beds.

Many of non-existent facilities in public health facilities are no longer on the agenda of the Punjab government. As a consequence a very wide gap still existed in rural and urban health indicators (Table 1.5). Although all the health indicators have shown positive development over the time period of study, yet the rural-urban differences are clearly visible. For instance, during the triennium ending 2006-07, the birth rate in rural Punjab was 18.5 per thousand live births compared to urban Punjab' birth rate of 16.7 per thousand live births. Similarly, the rural death rate was 7.4 per thousand compared to 5.8 per thousand in urban Punjab during the same period. As regards infant mortality rate, it was 48 per thousand live births and 36 per thousand live births in rural and urban Punjab respectively during the triennium 2006-07.

Table 1.5: Birth Rate, Death Rate and Infant Mortality Rate by Location in Punjab
(Rate per thousand)

Triennium Ending	Birth Rate			Death Rate			Infant Mortality Rate		
	Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined
1973-74	26.2	26.5	26.2	7.6	6.8	7.5	60.0	36.3	54.2
1976-77	28.1	27.9	28.0	8.9	7.7	8.6	73.6	53.2	68.7
1979-80	29.8	27.6	29.3	10.4	8.0	9.9	105.0	72.7	96.0
1982-83	30.8	28.7	30.3	9.8	6.9	9.1	84.7	57.7	78.7
1985-86	29.6	27.8	29.1	9.5	6.3	8.7	75.3	47.0	68.0
1988-89	29.1	27.5	28.4	8.8	7.0	8.3	66.0	55.7	63.3
1991-92	28.4	25.2	27.5	8.6	6.0	7.9	61.3	42.0	56.7

1994-95	26.6	21.8	25.3	8.3	5.9	7.6	59.0	37.7	54.0
1997-98	24.6	18.9	23.1	8.0	6.2	7.5	55.7	39.3	52.3
2000-01	22.4	18.6	21.4	7.6	6.1	7.2	56.0	38.0	52.3
2003-04	20.8	17.9	20.0	7.2	5.9	6.8	52.7	35.0	48.3
2006-07	18.5	16.7	17.8	7.4	5.8	6.8	48.0	36.0	43.7

Source: 1. *Health Information of Punjab*, (Various Issues), Directorate of Health and Family Welfare, Punjab, Chandigarh.

2. Economic and Statistical Organization, *Statistical Abstract of Punjab*, various issues, Government of Punjab.

3.5 Provision of Safe Drinking Water in Villages of Punjab

Another related aspect of health care infrastructure is the provision of safe drinking water in rural Punjab. Table 1.6 indicates data concerning to the villages covered under rural drinking water supply schemes in Punjab. The data show that out of 12,188 inhabited villages, 3712 villages were identified as water scarcity villages in 1981. Of these, 2025 villages (54.5 percent) were commissioned with drinking water supply schemes. The percentage of villages, where

Table 1.6: Villages Covered under Rural Drinking Water Supply Schemes in Punjab

Year	No. of Inhabited villages	Identified water scarcity villages	Scarcity villages where water supply schemes commissioned	Balance of scarcity villages where water supply schemes still to be initiated	% age col. 4/3
1	2	3	4	5	6
1971	N.A.	N.A.	N.A.	N.A.	N.A.
1976	N.A.	N.A.	N.A.	N.A.	N.A.
1981	12188	3712	2025	1687	54.5
1986	12342	3712	2652	1060	71.4
1991	12342	6287	4270	2017	67.9
1996	12428	8527	6409	2118	75.2
2000	12428	8518	7092	1426	83.3
2001	12428	10065	7281	2784	72.34
2002	12428	11849	7543	4306	63.66
2003	12402	11849	7847	4002	66.22
2004	12402	11849	8073	3776	68.13

2005	12402	11849	8321	3528	70.23
2006	12267	11849	8762	3087	73.95
2007	12267	11849	9001	2848	75.96

Source: Economic and Statistical Organization, *Statistical Abstract of Punjab*, various issues, Government of Punjab.

water supply schemes were completed, increased to 75.96 percent in 2007. The rest 24.04 percent villages were still without these water supply schemes.

3.6 Growth of Health Manpower in Punjab

Another important aspect of health care infrastructure in Punjab is the availability of trained manpower to run and manage the health care system in the state. Table 1.7 highlights the number of registered medical and para-medical personnel and population served per personnel in Punjab. The analysis shows that the number of registered doctors in state increased from 5,239 in 1971 to 20,879 in 2007. As a result of this increase, population served per doctor came down from 2642 persons in 1971 to 1300 persons in 2007. There is also a significant increase in the number of para-medical manpower in the state. For instance, the number of midwives shot up from 2,138 in 1971 to 28,816 in 2007, an increase of 13.47 times. And, due to this tremendous increase, population served per midwife came down from 6,475 persons in 1971 to 942 persons in 2007.

Year	Total				Population served per			
	Doctor	Midwife	Nurse	Dai	Doctor	Midwife	Nurse	Dai
1971	5239	2138	2603	10563	2642	6475	5318	1311
1976	7009	2646	3638	11749	2198	5822	4234	1311
1981	9307	4624	4712	17535	1838	3700	3631	976
1986	11340	7868	5952	29829	1658	2389	3158	630
1991	13237	12581	7647	34497	1560	1641	2700	599
1996	15198	19887	11576	40171	1684	1287	2210	637
2000	16526	24714	14844	45445	1470	983	1636	534
2001	16634	24915	15563	42651	1472	982	1573	569
2002	17367	25347	16836	43240	1324	981	1478	572
2003	17717	26175	18874	44614	1489	988	1370	565
2004	18594	27013	21110	45171	1468	1010	1293	569
2005	19129	27849	23346	45728	1388	954	1138	580
2006	19829	28422	26257	46377	1343	937	1014	574

2007	20879	28816	31817	46809	1300	942	853	580
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Source: *Health Information of Punjab*, (Various Issues), Directorate of Health and Family Welfare, Government of Punjab, Chandigarh.

On the other hand, number of nurses increased 12.22 times as their number was 2603 in 1971 and increased to 31,817 in 2007. And, number of mid-wives increased 13.47 times between 1971 and 2007. The data revealed that rise in the number of midwives (13.47 times) is higher than the increase in the number of nurses (12.22 times). In the case of dais, this increase works out to 4.43 times only as the number of dais was 10,563 in 1971 which increased to 46,809 in 2007. In nutshell, it can be stated that there has been a consistent increase in the availability of health manpower (both medical and paramedical) in the state.

IV

MAIN CONCLUSIONS

The study found that the public expenditure on social services vis-à-vis economic services was given a high priority, particularly during the 1970s and up to the end of 1980s in Punjab. The percentage share of public expenditure on social services out of total development expenditure incurred by the state was increased from 53.83 percent in 1972-73 to 55.87 percent in 1990-91, 66.35 percent in 2003-04 and then decreased to 52.54 percent in 2006-07. Amongst the social services, the highest priority was given to the education sector as the proportionate share of revenue expenditure on education sector lied between 28.97 percent and 44.95 percent over the time period under consideration. The next priority was accorded to the health sector, but the expenditure on health sector (in percentage terms) has decreased from 11.60 percent in 1972-73 to 8.82 percent in 2006-07. However, growth rate of public expenditure on health sector had experienced a sharp decline after the 1990-91, whereas the growth rate in public expenditure on health sector was 6.23 percent per annum during 1972-73 to 1989-90 compared to 4.54 percent per annum during 1990-91 to 2006-07.

Allocation of more funds to health sector up to the end of 1980s led to faster growth in establishing health infrastructure in rural Punjab that has brought significant benefits, at least in term of accessibility, to the rural people. For example, the proportion of rurally located health institutions increased from 57.46 percent in 1971 to 79.17 percent in 2007. The proportion of rural hospitals increased from 9.02 percent in 1971 to 33.33 percent in 2007, and that of dispensaries from 64.24 percent to 83.01 percent during the same period. The population served

per hospital, however, increased from 1.11 lakh persons in 1971 to 1.23 persons in 2007, whereas in the case of dispensaries and PHCs, it decreased from 0.46 persons to 0.18 persons and from 1.07 persons to 0.61 persons respectively during the same time periods.

Similarly, population served per bed decreased from 5341 people in 1971 to 1600 people in 2007 in rural areas. On the other hand, it increased from 405 people in 1971 to 677 people in 2007 in urban areas.

Further, all the health indicators have shown positive development over the time period of study, yet the rural-urban differences are clearly visible. For instance, during the triennium period of 2004-05 to 2006-07, the birth rate in rural Punjab was 18.5 per thousand live births compared to urban Punjab' birth rate of 16.7 per thousand live births. Similarly, the rural death rate was 7.4 per thousand compared to 5.8 per thousand in urban Punjab during the same period. As regards infant mortality rate, it was 48 per thousand live births and 36 per thousand live births in rural and urban Punjab respectively during the triennium period of 2004-05 to 2006-07.

Regarding the provision of safe drinking water supply in Punjab, it was found that 24.04 percent villages were still without the provision of safe drinking water facility in 2007. In the case of health manpower in Punjab, the number of doctors increased more than four times (from 5239 to 20879), the number of midwives increased more than 13 times (from 2138 to 28816), that of nurses 12 times (from 2603 to 31817) and of dais more than 4 times (from 10563 to 46809) during the time period under study. The fast increase in their number had a favourable impact on population served per health personnel in Punjab.

In nutshell, it can be safely concluded that public investment incurred during the first two decades of reorganized Punjab led to a remarkable improvements in the availability of health care institutions and supporting infrastructure in the state. On the other hand, number of additional beds provided in hospitals and other health institutions were inadequate compared to rising population in the state during the period under consideration. And, when public investment in health sector slowed down, public health care institutions did not function well, but began to deteriorate.

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