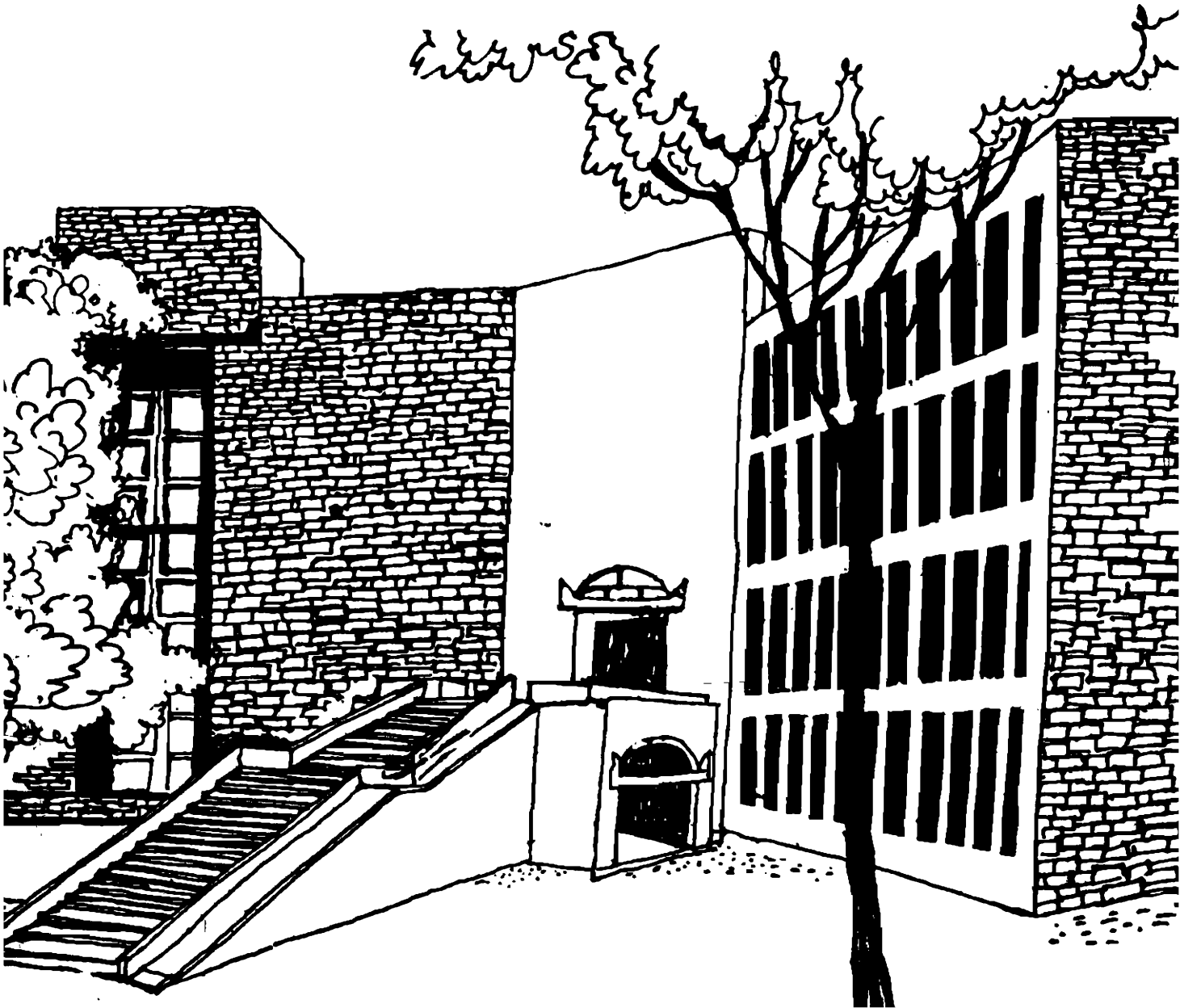




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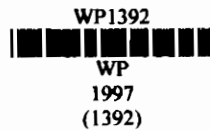


TRENDS OF OUTPATIENT AND INPATIENT
ADMISSIONS IN PUBLIC HOSPITALS OF
AHMEDABAD, INDIA OVER LAST 24 YEARS

By

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Trends of Outpatient Visits and Inpatient Admissions in Public Hospitals of Ahmedabad, India over last 24 Years

by
Chandrani Saha¹ and D.V. Mavalankar²

Abstract

This paper tries to show the trend of registration of patients (indoor & outdoor) in various medical institutes of Ahmedabad which are run by the Ahmedabad Municipal Corporation (AMC) in last 24 years (1971-94). The Civil Hospital which is run by State Government was also studied for the same time period for comparison. The trend analysis of the registered patients is based on the secondary data available from AMC. The study shows that in last 24 years there is substantial decline in outdoor patients in most of the hospitals under AMC inspite of 3.6% annual increase in city population. Only Civil hospital shows a rising trend. Overall number of indoor admissions have increased somewhat in AMC hospitals. But it was mostly in tertiary hospitals, while in smaller hospitals & maternity homes number of indoor admissions have declined. On the other hand there is a marked rise in number of private nursing homes over this period. The paper also tried to explore the likely reason for such trend in patient registration. It also discusses the policy implications for providing quality health service to the citizens.

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Introduction

In India 25% of the population i.e. 217 million people live in urban areas. According to many urban studies it has been forecasted that around 350 million people will be living in urban areas by the turn of the century. In Gujarat state according to 1991 census 34.4% of the people live in urban areas. The rapid industrialization would attract more migrants in the urban areas. Due to liberalization and industrialization more number of people are likely to stay in the urban areas in future.

Due to urbanization more number of people are compelled to stay in densely populated areas with inadequate water supply, sanitation problem and along with air pollution. In order to provide better quality of life the local government has to do some obligatory (medical relief, public works, etc.) and discretionary functions (slum clearance, milk supply). The Ahmedabad Municipal Corporation (AMC) also takes care of the public health, hygiene and medical relief as its obligatory function. It has preventive health measures such as cleaning public places, drains, sewers, collecting solid waste, vaccination, control of air pollution etc.

But besides these public health measures it also provides curative care by establishing and maintaining public hospitals, dispensaries, maternity services, children welfare & family planning services. The local government plays important role in assuring that health care becomes universally and more or less equitably available. It is an important social investment in order to ensure that public has good health.

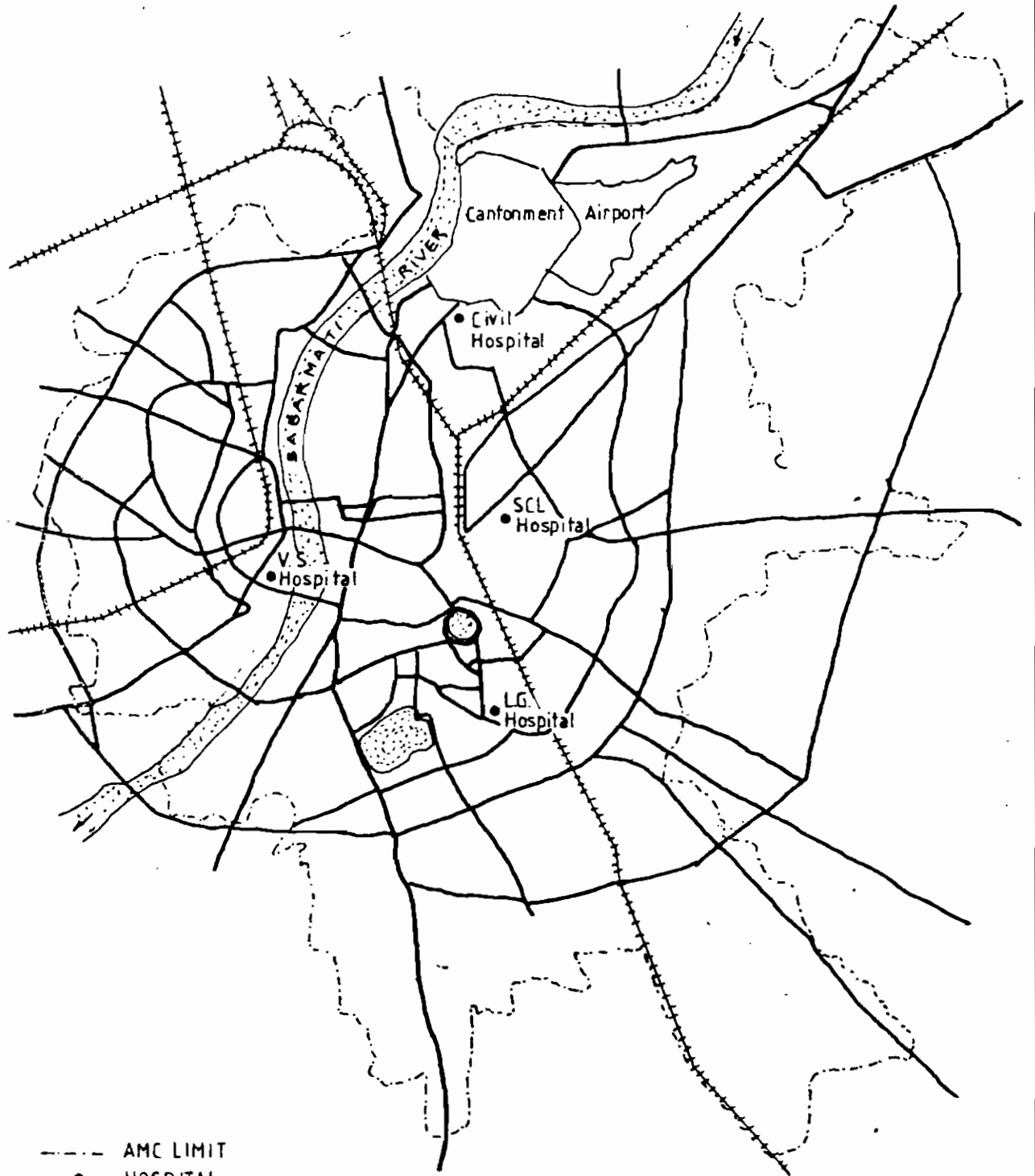
In Ahmedabad the AMC runs three teaching hospitals, several municipal dispensaries, maternity homes, specialized clinics (chest, dental clinics) and specialized hospitals (eye, infectious diseases). Besides that the city has Civil Hospital run by State Govt. This paper tried to study the trend of indoor and outdoor patients in the various medical institutions run by AMC from 1971 to 1994. The 24 years study of the number of indoor and outdoor patients registered indirectly tells about the performance of these institutions in a changing environment. The citizens preference for source of medical services can be noticed from these trends.

What was the trend in registration of indoor and outdoor patients in various types of medical institutes run by AMC? What is the trend in private nursing homes? What might be the likely reason behind such trend? Whether the medical institutions run by AMC are able to meet the demand for medical services of the citizens? This study tries to answer these questions.

Research Methodology

The study tried to show the trend of registration of patients (indoor and outdoor) in all general and specialized medical/health institutes run by Ahmedabad Municipal Corporation (AMC) in last 24 years (1971-1994). This study is based on the secondary data available from the AMC regarding the number of registered patients in indoor and outdoor in various health institutes. The study included the three general hospitals (VS. LG and SCL General hospital), all municipal dispensaries (Allopathic, Unani and Ayurvedic), specialized hospitals (like eye, chest and infectious diseases), maternity homes and dental clinics. The Civil Hospital run by the state government has also being studied for same period for comparison with the municipal hospitals. The number of private nursing homes registered had been used as a surrogate as the data of patients going to private nursing homes are not available.

AHMEDABAD



--- AMC LIMIT
● HOSPITAL

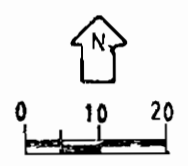


Fig1. Trends in total OPD cases treated in all Medical Institutions under A.M.C. 1971-94

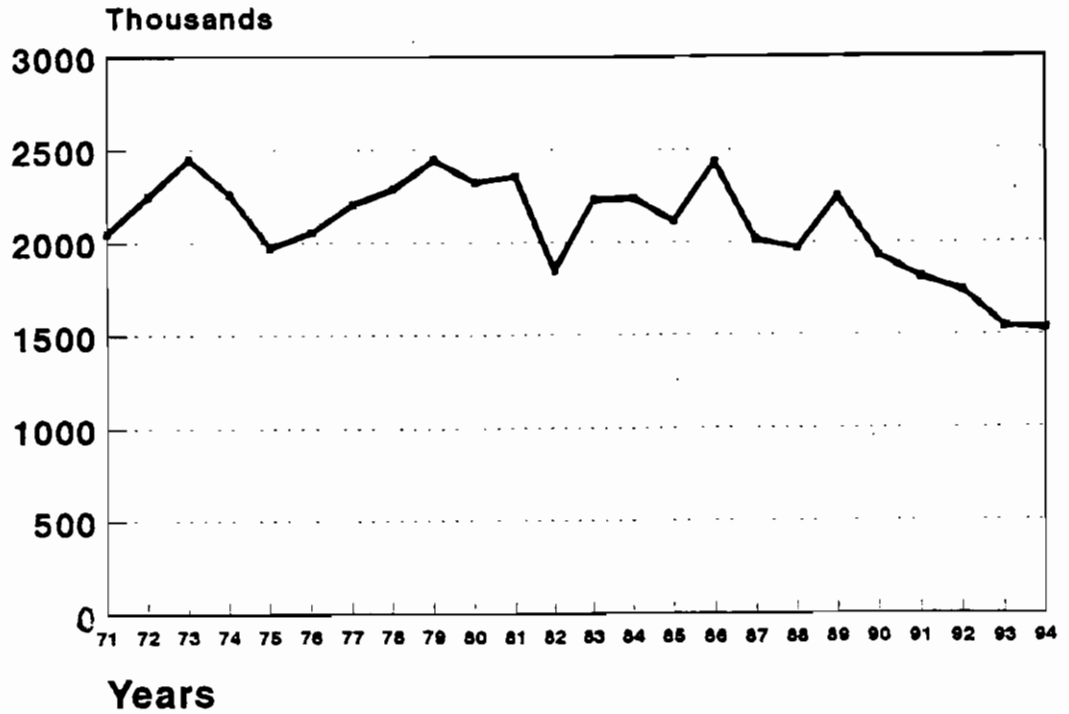
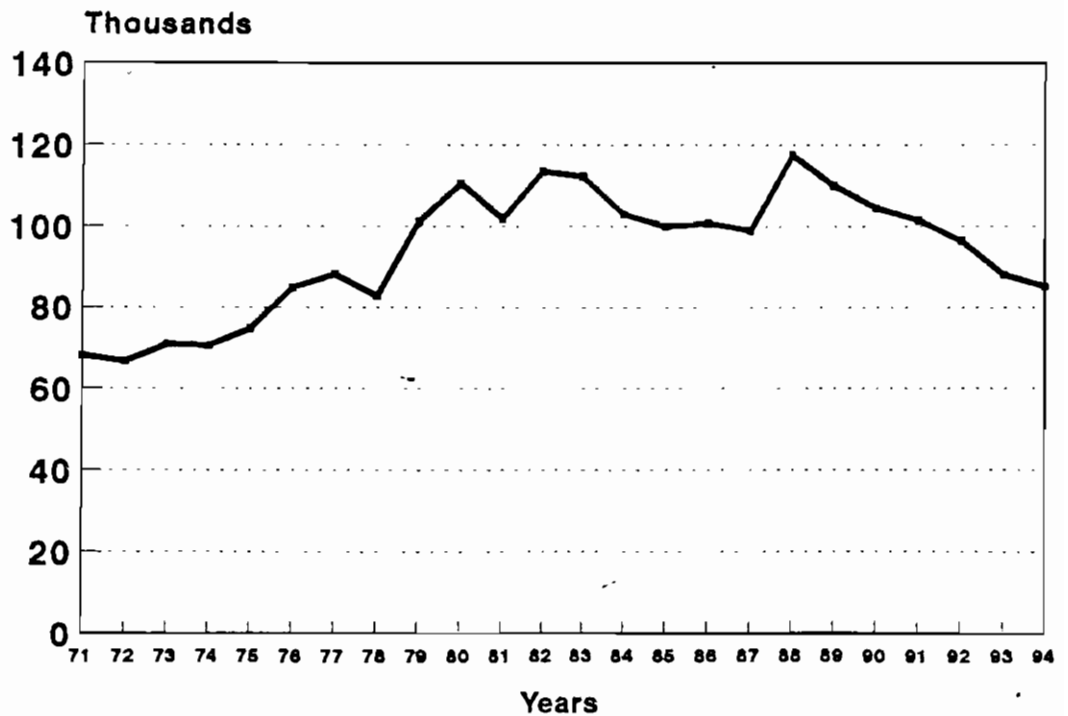


Fig. 2 Trends in indoor cases treated in all Medical Institutions under AMC 1971-94



Some insights had been drawn from qualitative observations done by one of the authors(Saha C.,1995) in one municipal teaching hospital. The conclusions shown from the primary observations had been used in this paper. The discussions with four doctors of VSG Hospitals had helped to understand the present situation of the health institute and also know about the various causes for low performance in the public health sector compared to the private.

Results

Treatment at Medical Institutions

The medical institutions of AMC can be broadly divided into two groups, general and specialized. There are three general hospitals (VS, LG and SCL) and five referral hospitals and 25 municipal dispensaries in the general category. In the specialized category there are three specialized hospitals (eye, chest and infectious diseases) 18 maternity homes and 4 dental clinics.

Table 1

Ahmedabad Population

Year	1971	1981	1991	1995 * estimated
Ahmedabad City (in Lakhs)	16.12	21.59	29.48	34.03
Average Annual Growth Rate (%)		3.39	3.65	

General Medical Institutions

The number of general medical institutions had increased from 31 in 1971 to 34 in 1994 though Ahmedabad city population had increased by 13.35 lakhs (82.82 %) between 1971 and 1991. The number of beds in the general medical institutions rose from 1,150 in 1971 to 1934 (68.17 %) in 1994. Between 1992 and 1993 the number of beds decreased by 47% though the Ahmedabad population is increasing by 3.65% per year. Thus the data shows that in last 24 years hardly any new medical institutions were started but most growth came by adding beds to existing institutions. But overall increase in beds did not keep pace with rising population of the city.

The outdoor cases (OPD) treated in all general medical institutions in a year had reduced by 5.19 lakh (25.30%) between 1971-94. The total outdoor patients were above 20 lakhs generally till 1989 (there were exceptions in 3 years). But after 1989 the outdoor patients had been continuously decreasing (fig. 1). It was least i.e. 15.32 lakh in 1994.

The number of annual indoor patients had increased by 17008 (24.98%) between 1971-94. The bed to patient ratio increased from 1 : 2197 in 71 to 1 : 2503 in 94. From 1971 to 1982 there was increase in indoor patients from 68,092 to 1,13,526. Though there was fall in patients from 1983 to 87 (fig. 2) but in 1988 there was a sudden rise to 1,17,561 patients. This might be due to large epidemics of typhoid, cholera and gastroenteritis (GE) in that year. But after 1988 there has been continuous decline in the number of indoor patients. In 1992-93 within one year there was a fall of 8,498 patients.

Fig. 3 Trend of total OPD cases treated at Specialised Medical Institutes under AMC 1971-94

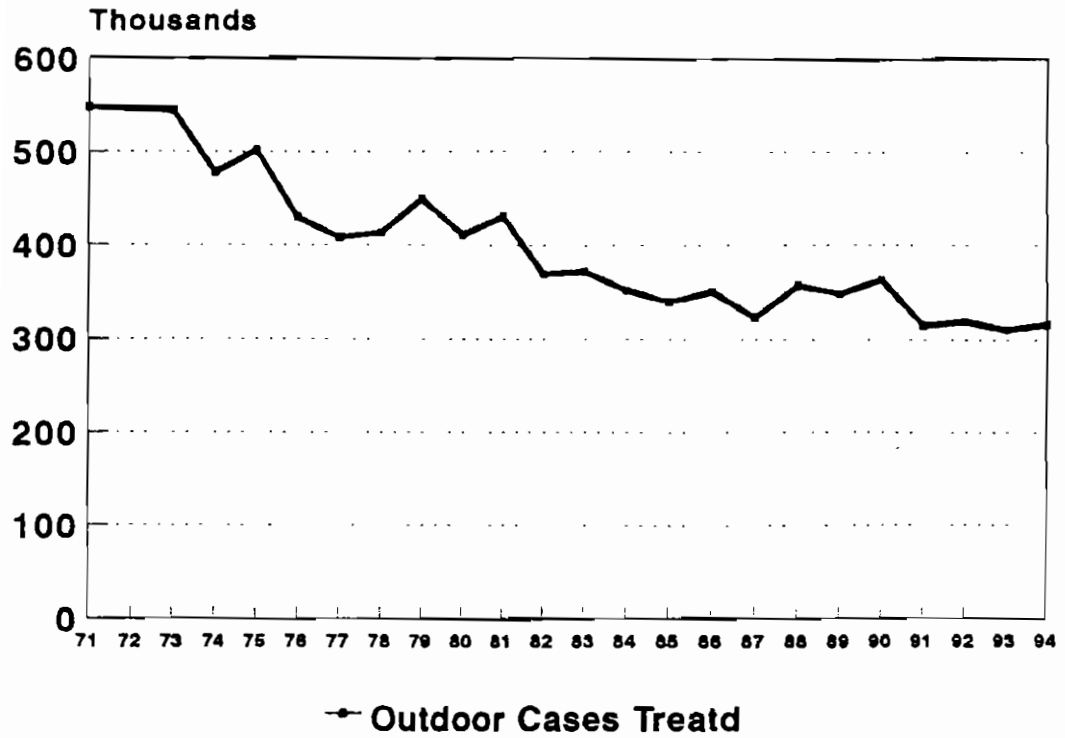
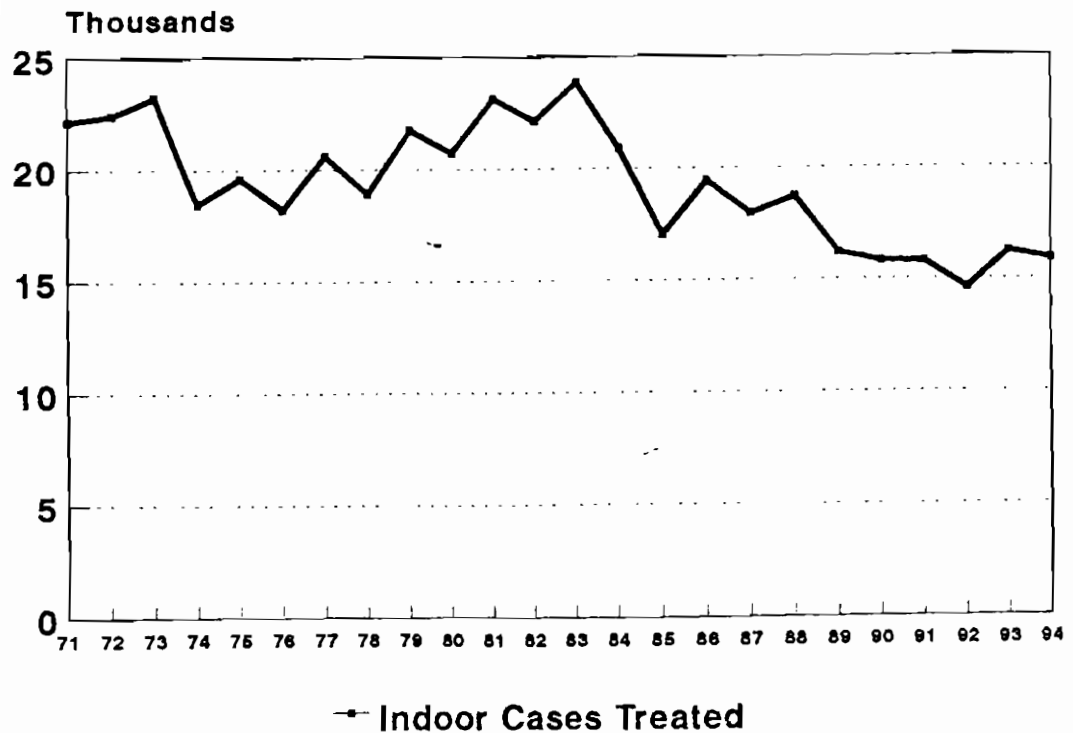
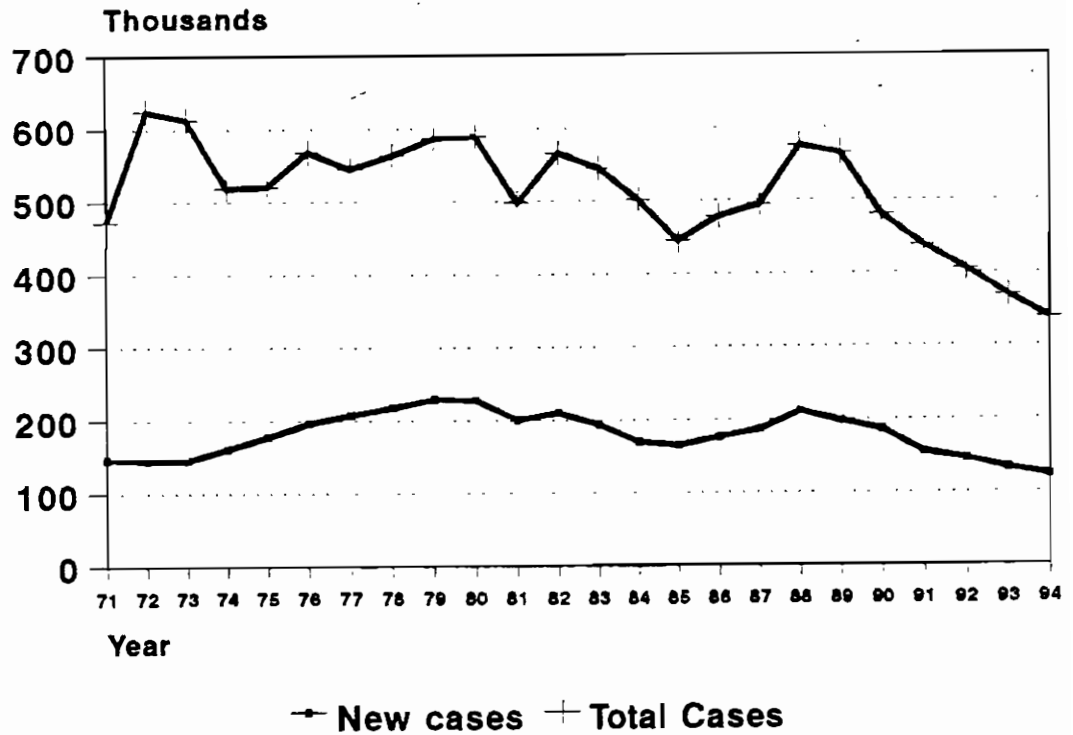


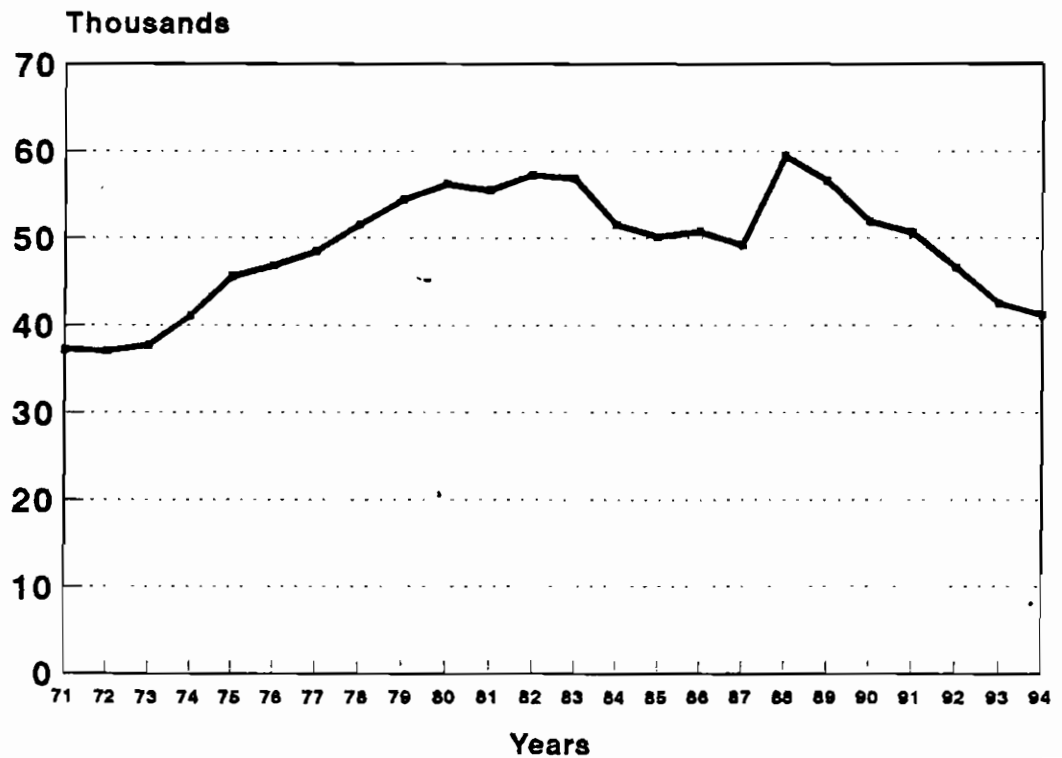
Fig. 4 Trend of indoor cases treated at Specialised Medical Institutes under AMC 1971-94



**Fig. 5 Trends of total & new OPD cases
Treated at V.S. General Hospital
1971-94**



**Fig. 6 Trends of indoor cases treated
at V.S. General Hospital 1971-94**



Specialized Medical Institutions

The number of specialized medical institutions had declined by seven between 1971-94. The numbers of beds in these institutions in this period showed fluctuations in this period. In 1971 there were 785 beds which increased to 836 in 1977. But in 1993 the number of beds drastically dropped by 30% and there were only 491 beds.

The number of outdoor cases treated had reduced from 5,48,030 (1971) to 315,966 (1994), thus it declined by 2,32,064 (42.35%). The outdoor patients were highest in the first year of the study (1971) and it showed decline in the later years. Till 1973 there were more than 5 lakh patients (fig. 3). Between 1974 to 1981 there were 4 to 5 lakh patients (except in 1975 it was more than 5 lakh). From 1982 to 1994 there were 3 to 4 lakh patients. There was sharp decline of 48,935 patients in only one year (1990-91).

The indoor cases registered in specialized medical institutions showed many ups and downs though the percentage reduction was less compared to the outdoor patients between 1971-94. In 1971 there were 22,164 indoor patients and it decreased to 15,874 in 1994 i.e. it decreased by 28.38%. From 1971 to 1973 there was increase of 1064 patients and it touched the peak of 23,228 patients in 1973 (fig. 4). Then there was alternate year of ups and downs. From 18,208 indoor patients in 1976 it touched the highest peak in 1983 (23,855). After 1983 the general trend of indoor patients is decreasing. In 1986 and 1988 there was rise in patients which may be due to the epidemics of GE.. In 1992 it touched the bottom figure (14,582) but it increased marginally to 15,874 in 1994.

Teaching Hospitals

There are three teaching hospitals under the municipal Corporation (VS General Hospital, LG. General Hospital and SCL General Hospital). The State Government runs the fourth teaching Hospital i.e. Civil Hospital.

V S General Hospital

It is a semi-municipal hospital located in western residential part of the city. It is financed by Ahmedabad Municipal Corporation but has separate board for its governance. The total number of outdoor patients in VS Hospital had decreased from by 28.36% from 1971-94. The maximum number of outdoor patients were 6,24,496 in 1972. Since 1988 the patients are decreasing each year (fig. 5). In one year (1989-90) the number of cases dropped by 84,306. The minimum number of patients were in 1994 i.e. 3,38,748.

The new patients in the OPD had also reduced by 23,729 or 16.1% from 1971 to 1994.

The number of beds had increased from by 36.17% while the number of indoor patients had increased by 10.71%. Among all the indoor sections of 3 general hospitals run by AMC, VS hospital indoor section shows least growth. The ratio between bed and number of patients had decreased from 1 : 54 to 1 : 44 during this period. The indoor patient increased till 1980 then there were ups and downs. It reached the peak in 1988 (may be due to epidemics). Since 1988 each year there is

Fig. 7 Trends of total & new OPD cases treated at L.G. General Hospital 1971-94

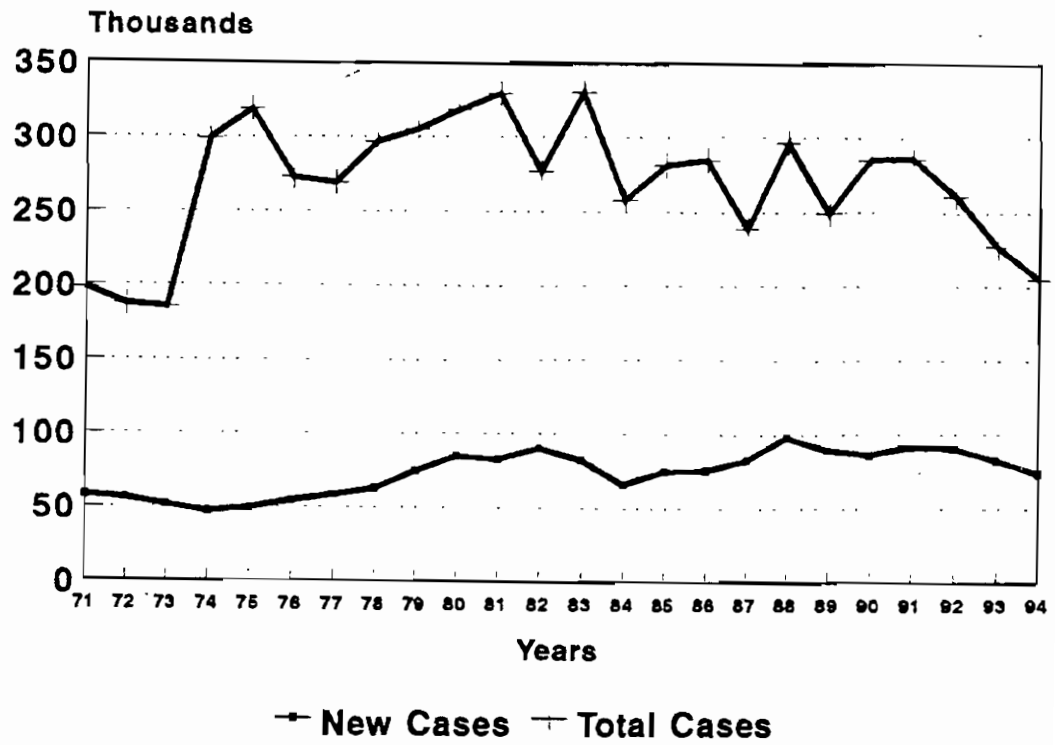


Fig. 8 Trends of indoor cases treated at L.G. General Hospital 1971-94

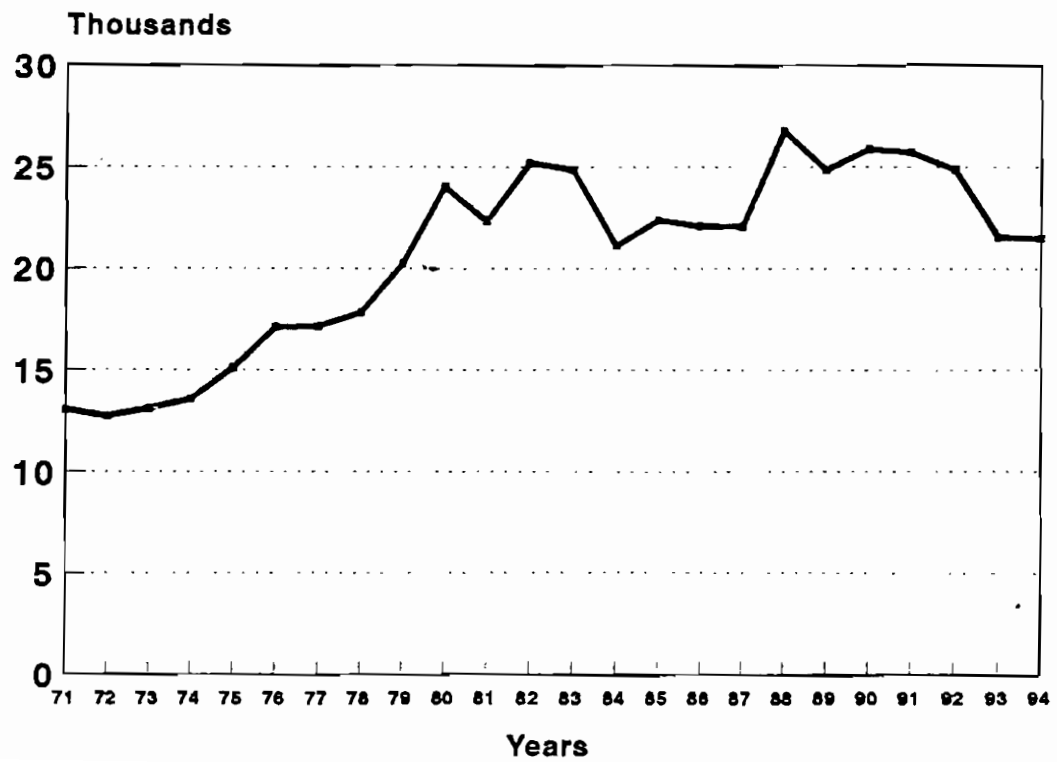


Fig. 9 Trends of total & new OPD cases treated at S.C.L. General Hospital 1971-94

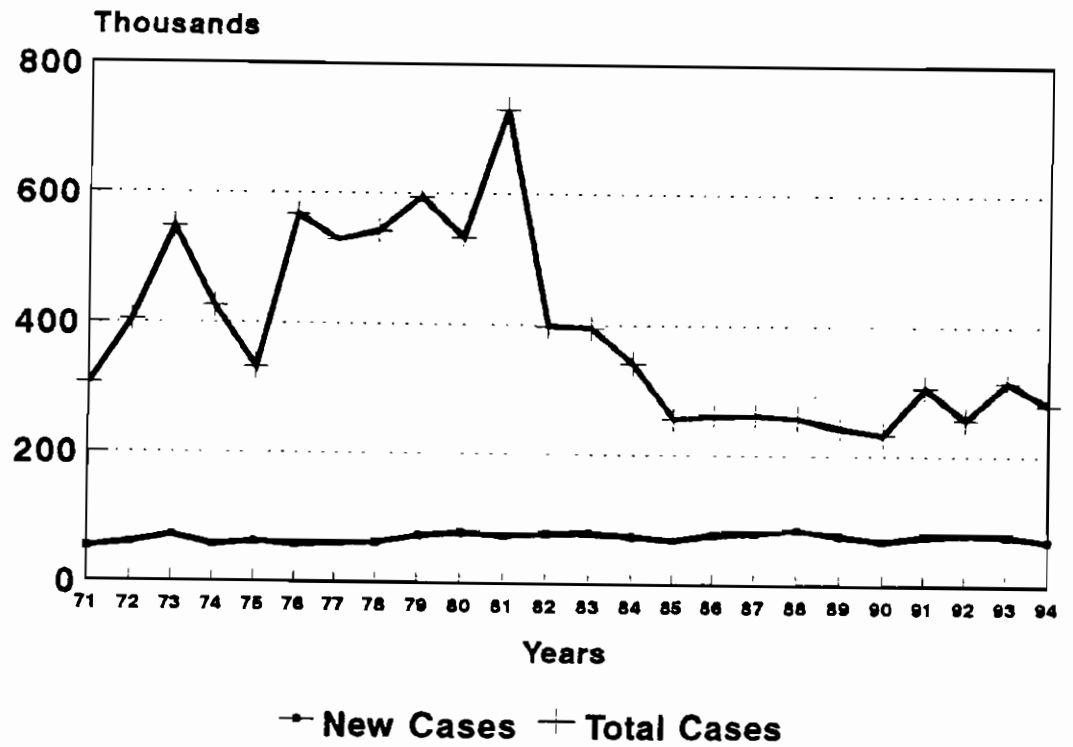


Fig. 10 Trends of indoor cases treated at S.C.L. General Hospital 1971-94

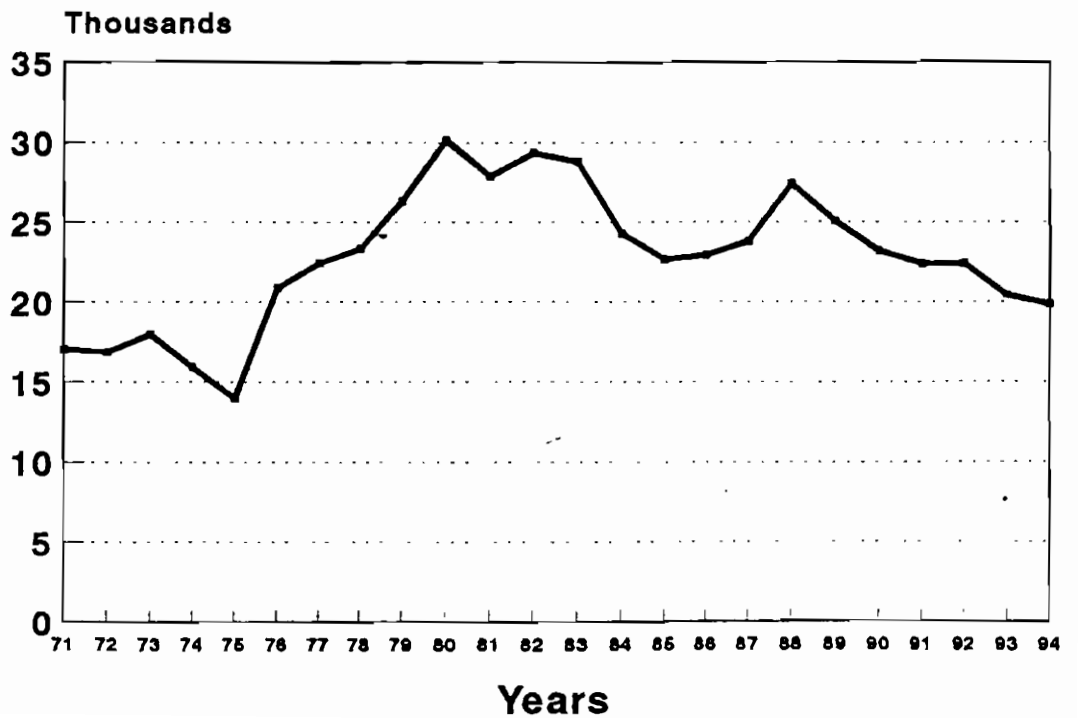


Fig. 11 Trends in total & new OPD cases treated at Civil Hospital 1971-94

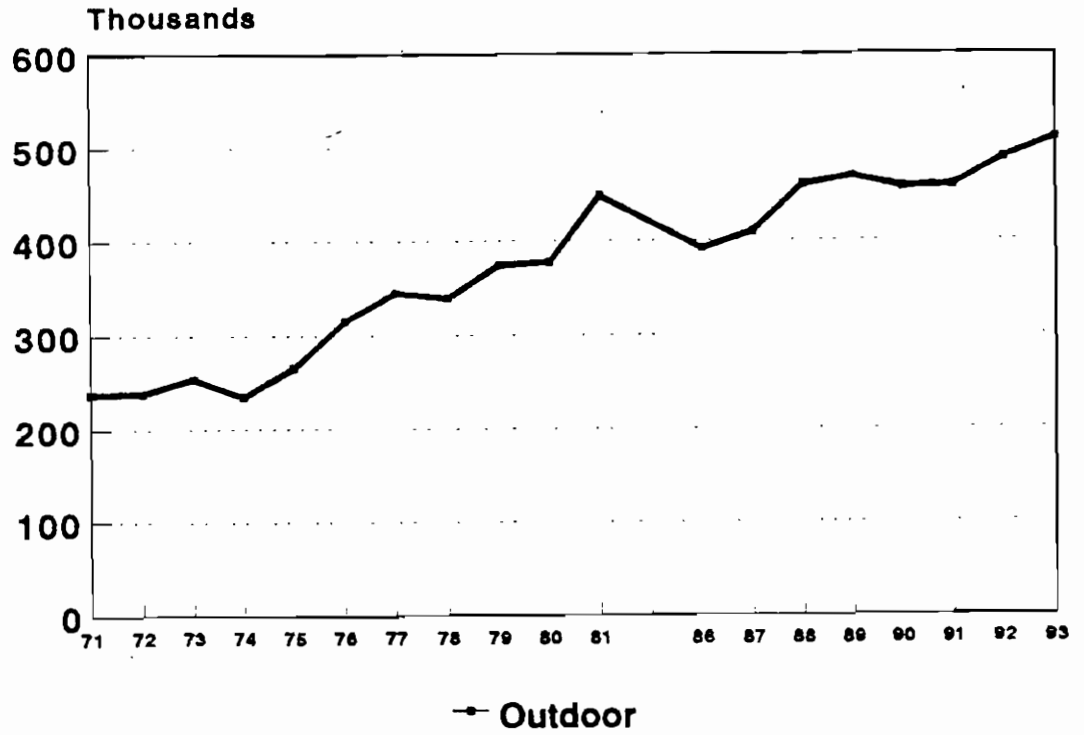
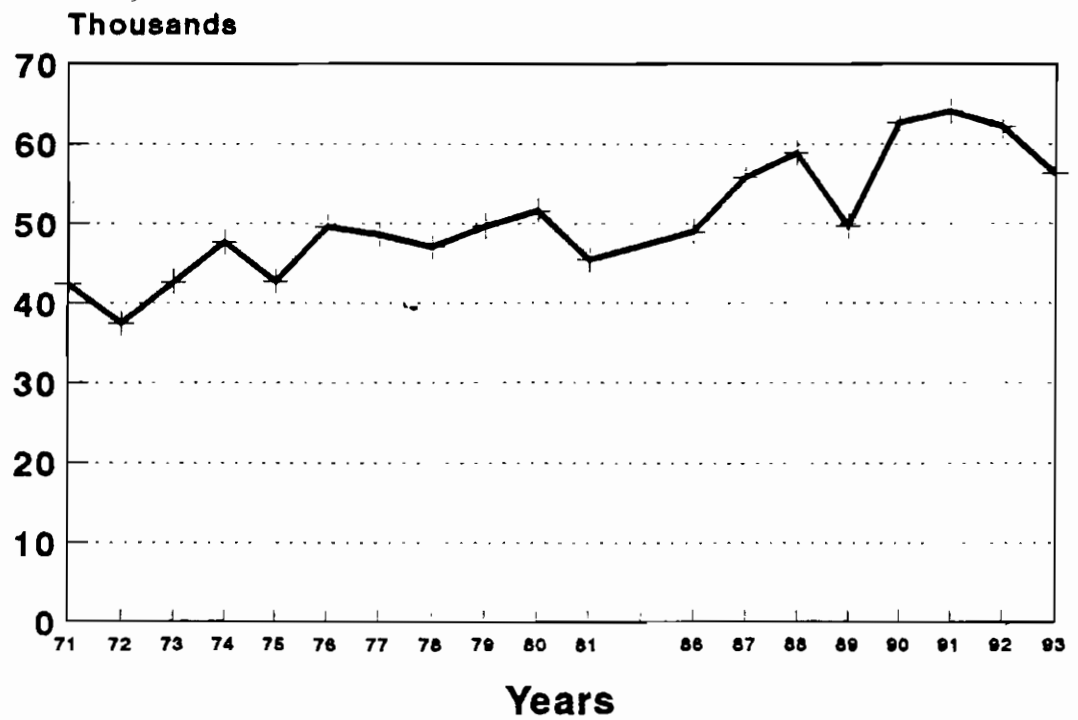


Fig. 12 Trends of indoor cases treated at Civil Hospital 1971-94



decreased in indoor patients. In last six years (i.e. from 1988 to 1994) the patients have declined by 41.15 %.

L G General Hospital

L G General Hospital is a Municipal Hospital located in Southern Residential and industrial areas of the city. L.G. General Hospital stand out in performance from the other hospitals run by municipal corporation as there is growth of patients both in outdoor and indoor. The outdoor cases registration showed an increase of 3.74% from 1971 to 1994. It touched the peak in 1983 (3,30,668). Since 1991 there has been continuous decline of about 8,101 outdoor patients in 3 years (fig. 7). The old OPD patients have declined from 194,952 in 1991 to 131,722 in 1994 i.e. by 32.43 % while in the same period the new OPD patients had declined by 24.21 %.

The new patients showed an increase of 27.09% between 1971- 1991 and it reached a peak in 1991 to 91,677. But after that there is continuous decline for next 3 years.

The number of beds had increased from 195 in 1971 to 403 (106 %) in 1994. The indoor patients had increased by 64.59% which is less than percent increase in beds. In 1988 there were maximum cases (fig. 8) which may be due to epidemic of GE. In LG hospital the decline of indoor patients started after 1990 but in 1992 there was sharp decline in indoor patients.

SCL General Hospital

SCL. General Hospital is located in eastern industrial area of the city. The total outdoor patients in SCL hospital had declined by 27,737 (9.05%) from 1971-1994. From 1971 to 1973 there was continuous rise in patients and after that there were ups and downs. The peak was reached in 1981 with 7,29,953 patients (fig. 9). In 1981-82 there was a sharp fall of 3,31,620 patients which is distinctive. After 1990 there were alternate years ups and downs.

The trend in new OPD cases has been steady with gradual increase in numbers. The new cases registered in the outdoor had shown increase by 28.34%. Thus the fall in the total outdoor patients must be due to the decline in old patients coming for repeat visit.

There is 16.56% growth in the indoor case registration(fig 10) between 1971 to 1994. One reason for this growth might be the increase of bed from 246 in 1971 to 406 in 1994. There was rising trend of indoor patients till 1980 except in 1974-75. In 1980, the maximum indoor patient was 30,147. Then from 1984 to 85 there was decline. Another peak was seen in 1988 with 27,385 patients which might be due to the epidemic of GE. Since then there is a continuous decline of 7,525 patients (in 6 years) which draws attention.

Civil Hospital

The civil hospital located in the northern part of the city, is under the state government but it is included here in order to compare it with the municipal hospitals in Ahmedabad. The total outdoor patients in 1971 were 2,37,635 and it increased by 2.14 times (113.77%) to 507,998 in 1994 (fig. 11). There is overall rising trend in the number of patients (though data for some years 82-86 were not available). The hospitals run by AMC are showing negative growth rate in outdoor patients from 1971-94 and specially in 1990s. The civil hospital presents a rising trend in outdoor patients after 1990 also. The important fact is that the maximum OPD patients were in 1994.

Fig. 13 Trend of total OPD cases treated at Municipal Dispensaries & Referral Hospitals under AMC 1971-94

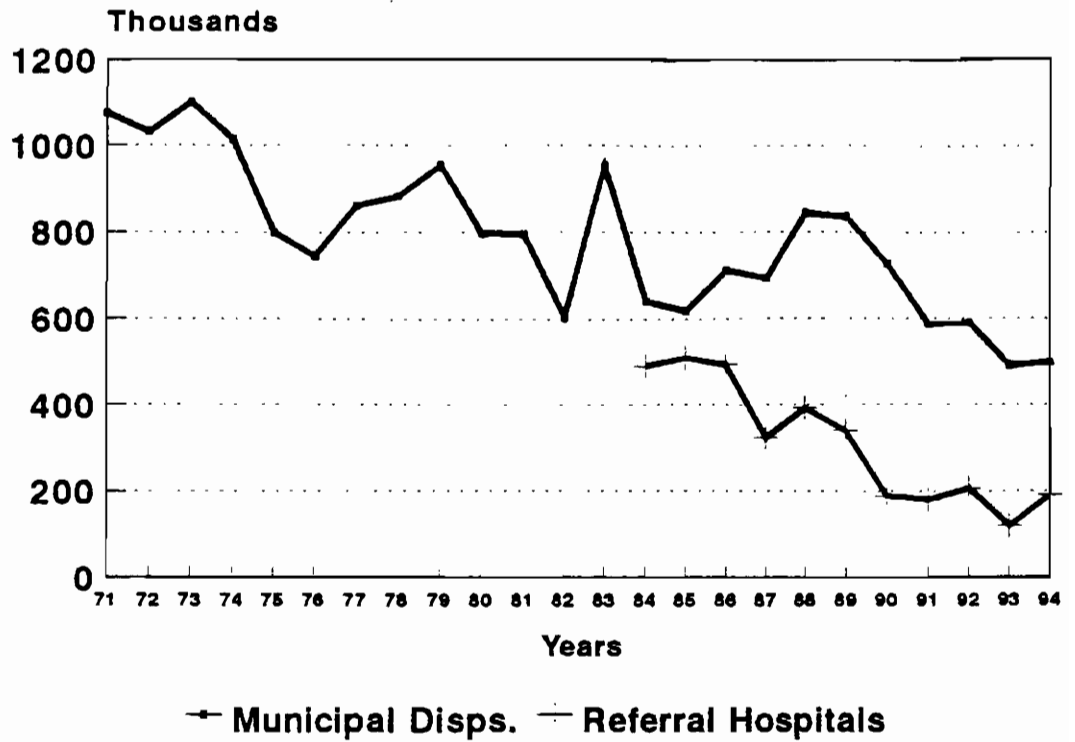


Fig. 14 Trends of new OPD cases treated at Municipal Dispensaries and Referral Hospitals under AMC 1971-94

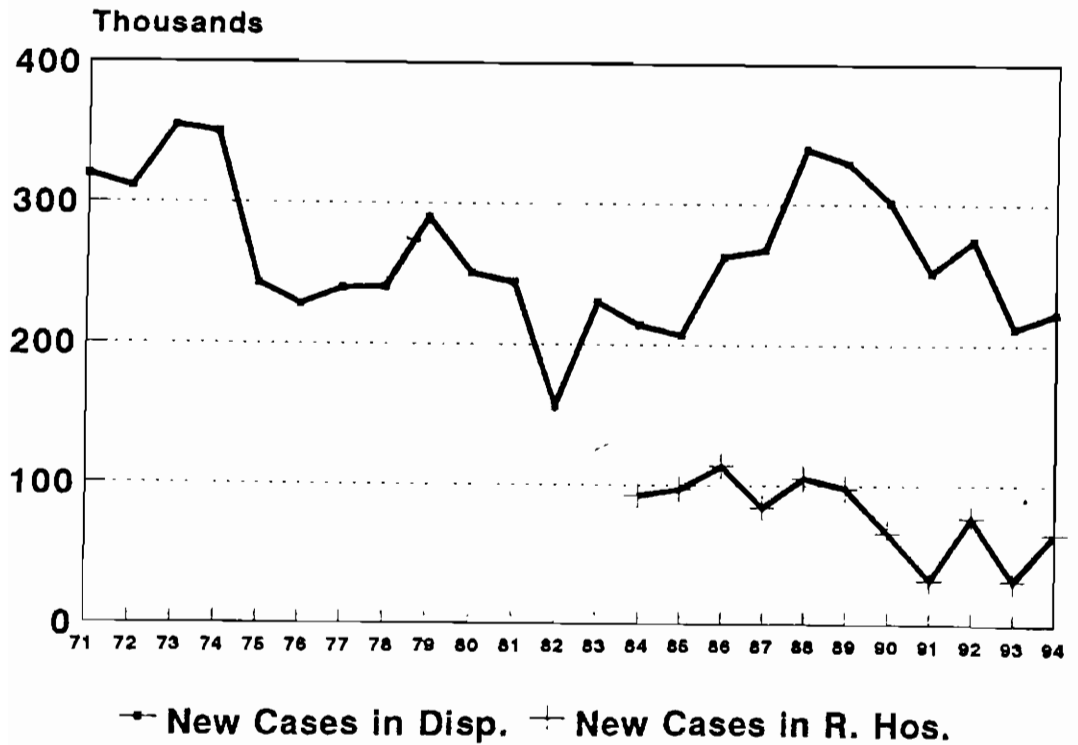
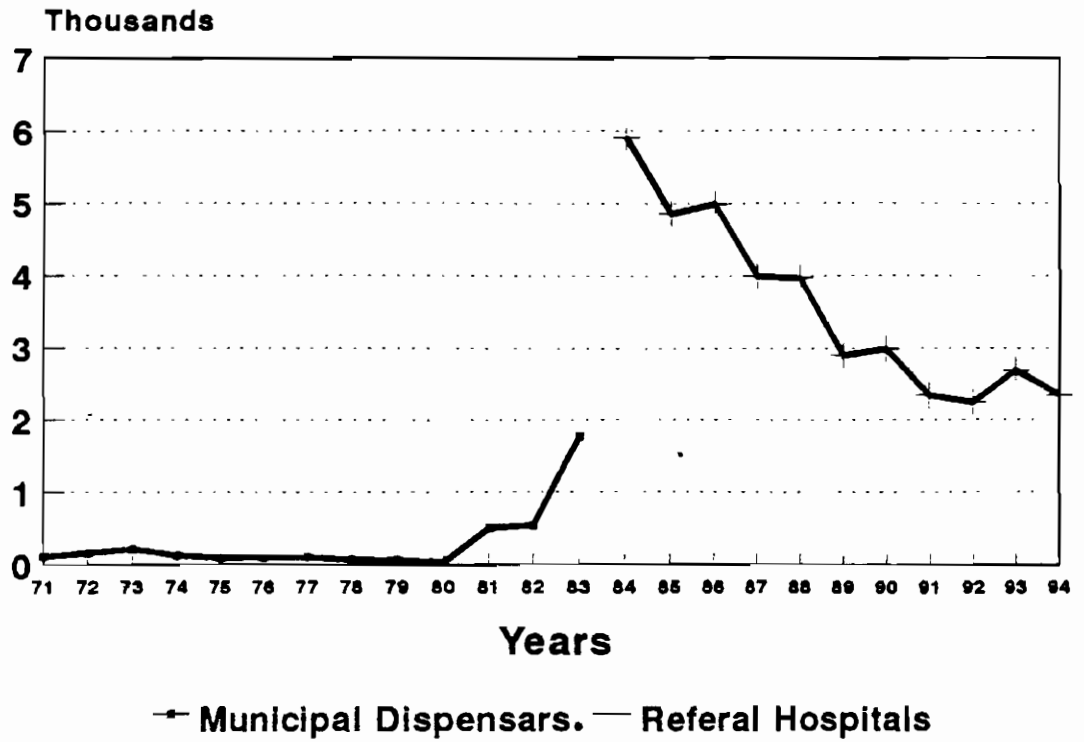


Fig. 15 Trends of indoor cases treated at Municipal Dispensaries & Referral Hospitals under AMC 1971-94



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Fig. 16 Trends in Total & new OPD cases treated in all Municipal Maternity Homes under AMC 1971-94

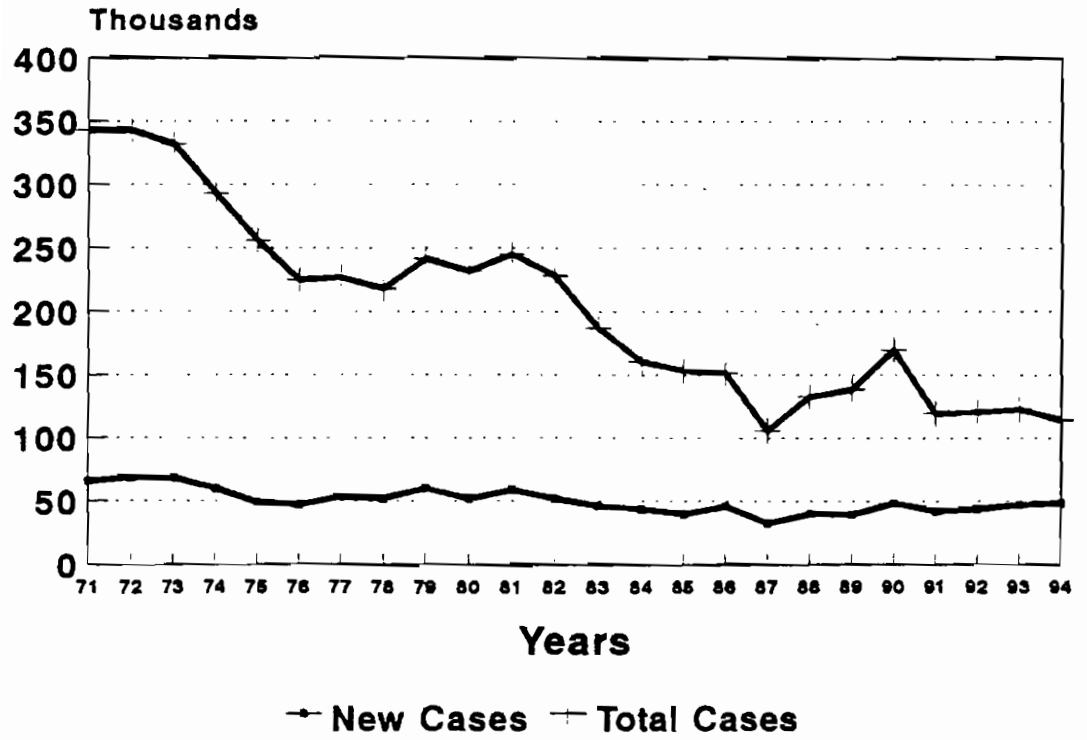
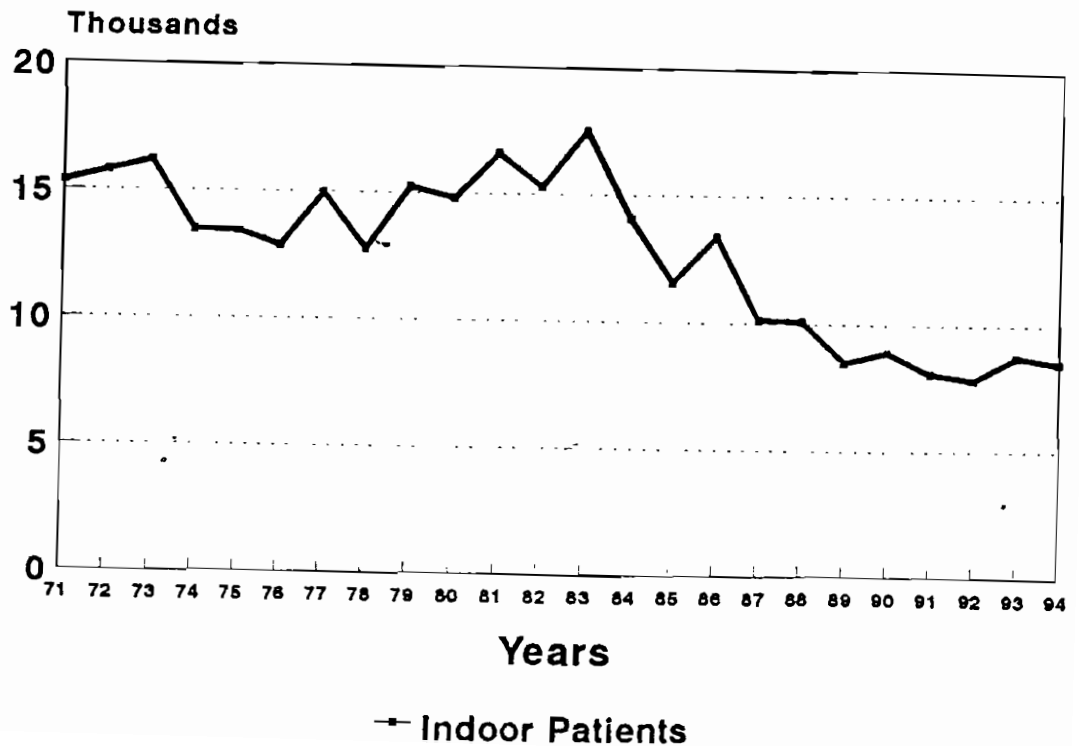


Fig. 17 Trends in indoor cases treated at Municipal Maternity Homes under AMC 1971-94



The indoor patients had increased from 42,386 in 1971 to 56,270 in 1993-94 in an increase of 32.76% in 23 years. There is in general rising trend in the indoor patients (fig. 12) though there are ups and downs. The maximum number of patient was in 1991 (64,095). After 1991 there was fall in indoor patients and between 1992-93 there was a fall of 5,933 patients.

Municipal dispensaries, Referral Hospitals and Maternity Homes.

Municipal Dispensaries

Allopathic, ayurvedic and unani treatments are carried in the 25 municipal dispensaries. In 1971 these were 28 in number and later increased to 31 in 1976 and were stable till 1983. In 1984, 5 dispensaries were changed to referral hospitals and thus only 27 dispensaries remained. Though number of dispensaries it increased to 28 in 1986 later they were reduced to 25 in 1993.

There were 10,75,247 total out door patients in 1971 in all dispensaries but it reduced by 53.57% in 1994 (fig. 13). The performance of the municipal dispensaries is declining in terms of OPD attendance. There are ups and downs in last 24 years but in general the total cases treated are declining. The maximum number of patients were in 1973 and minimum in 1994. The reduction in the number of dispensaries may be one reason for the decline in patients.

The graph (fig. 14) of new cases registered in dispensaries showed two peaks, the first was in 1973 and the second was in 1988. The second one perhaps due to G.E. epidemic. Since 1988 the new patients have been declining except in 1992 and 1994 when there was slight rise in patients.

The indoor section of municipal dispensaries operated from 1971 till 1983 and the beds increased from 15 to 40. The patients increased from 112 to 1774. In 1983 there were maximum increase in indoor patients i.e. by 1232. After 1983 there were no indoor patients because these dispensaries with indoor facility were converted to referral Hospitals.

Referral Hospitals

In 1984, 5 dispensaries were converted into referral hospitals. The total outdoor patients in these referral hospitals in year 1984 were 4,91,749. But in 1994 there were only 1,90,411 patients which shows a reduction of 61.28 %. Thus the situation in referral hospitals is also alarming.

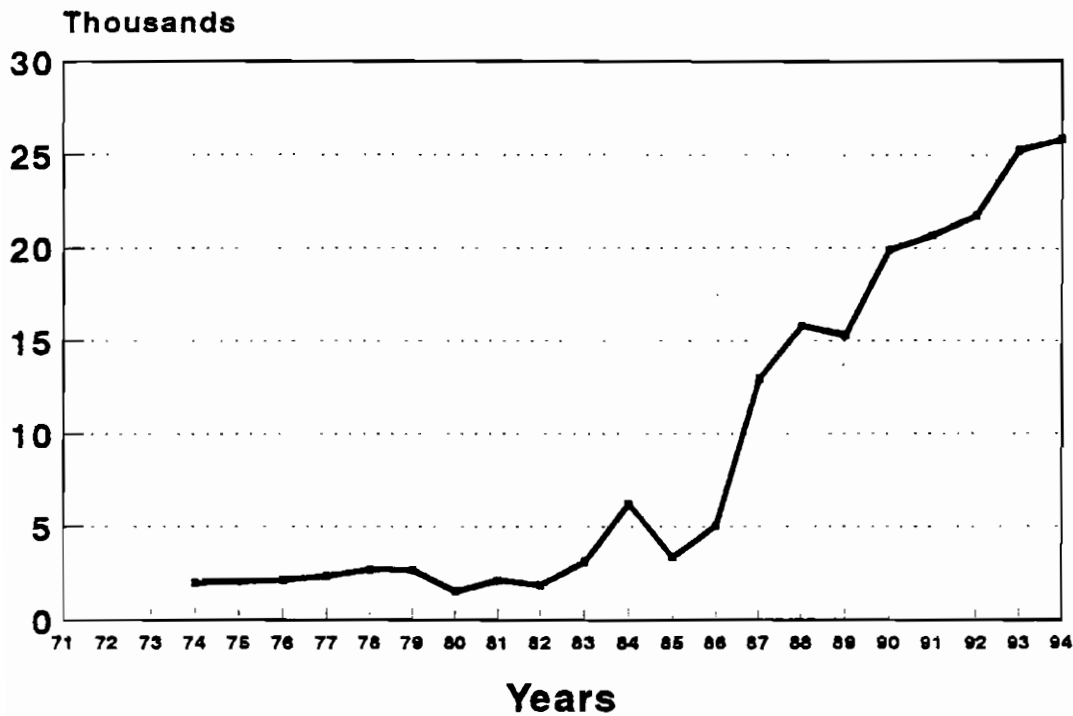
The new patients registered showed a decline of 29.57% from 1984 to 1994 (fig. 14).

The indoor patients situation is also alarming with a reduction of 60.27 % of patients from 1984 to 1994 (fig. 15). The cases registered had shown decline (fig 15) in general except in some years (1986, 1990, and 1993).

Maternity Homes

There were 20 maternity homes in 1971 but it decreased to 13 in 1994. The number of beds decreased from 563 to 249 between 1971-94.

**Fig. 18 Trends of total OPD cases at
Infectious Diseases Hospital
1971-94**



**Fig. 19 Yearwise distribution of
Gastro Enteritis cases in Ahmedabad
1984-94**

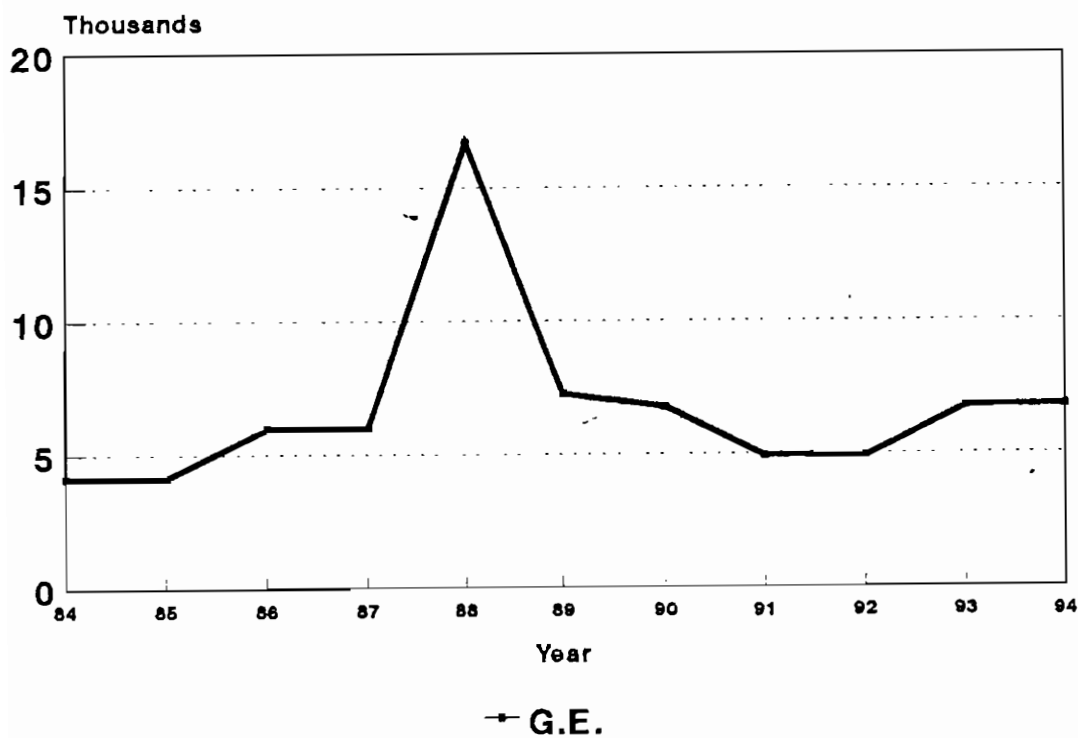


Fig. 20 Yearwise distribution of cholera cases in Ahmedabad 1984-94

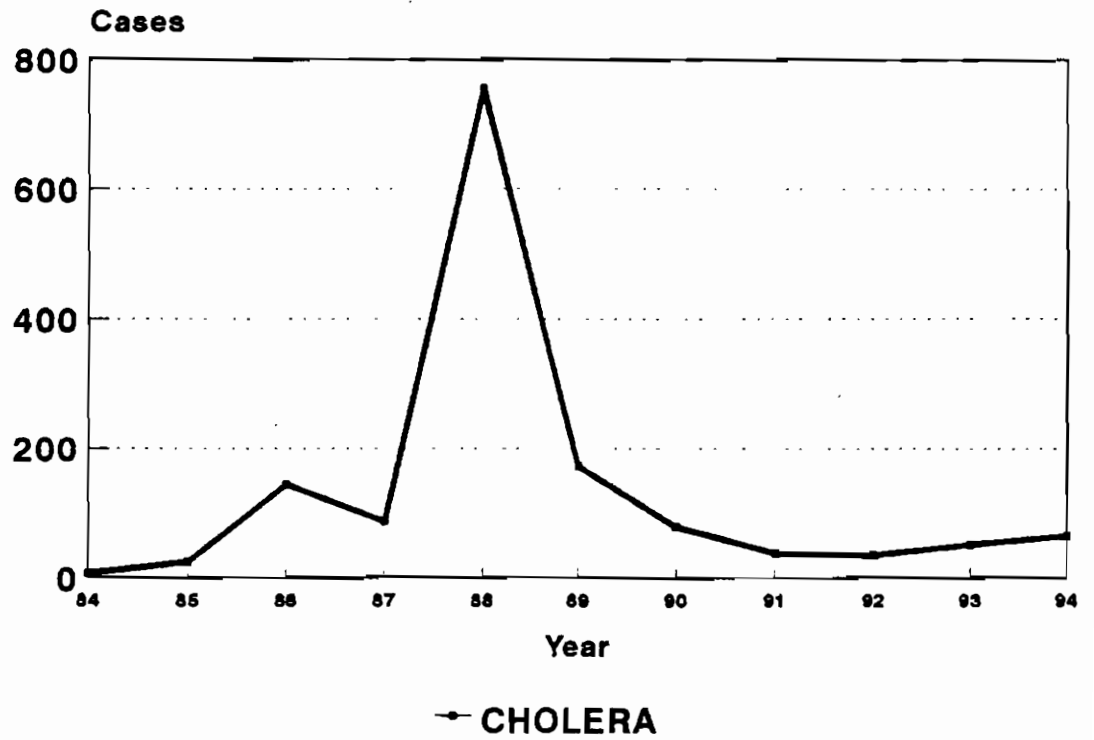
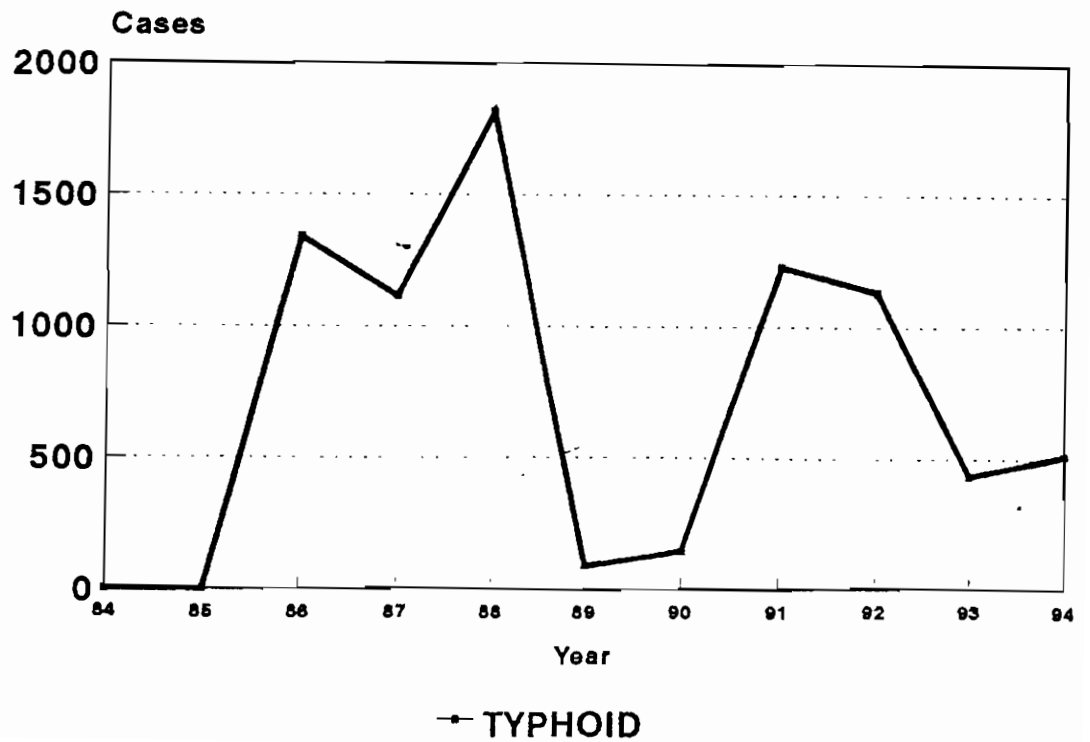
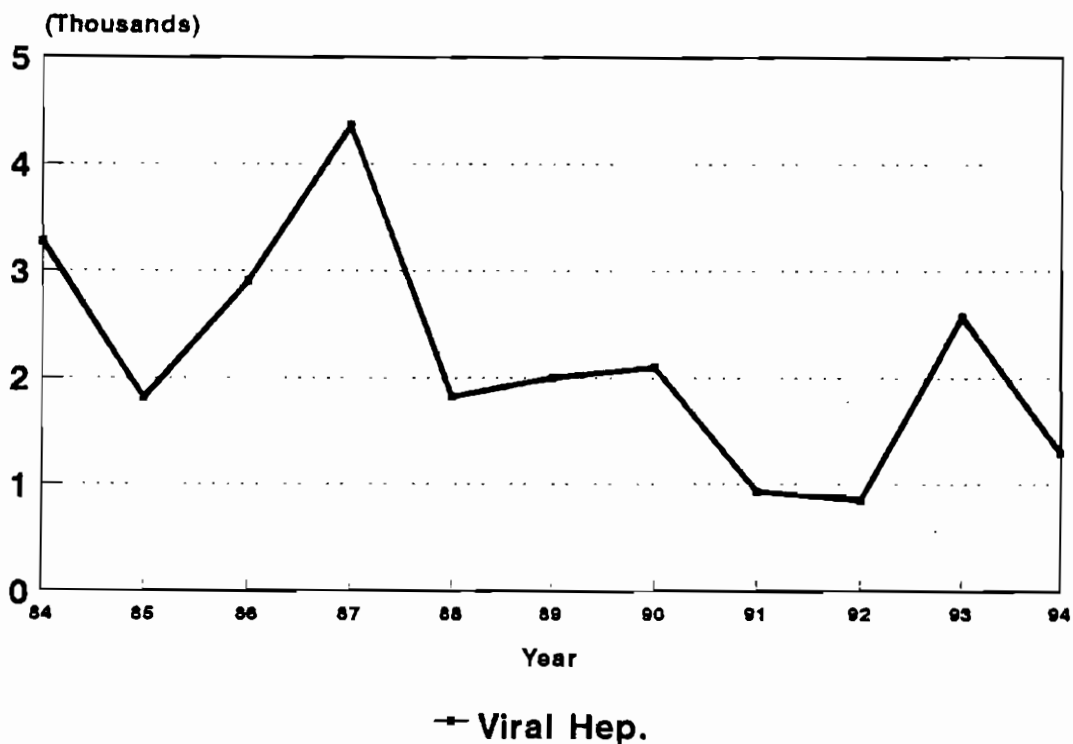


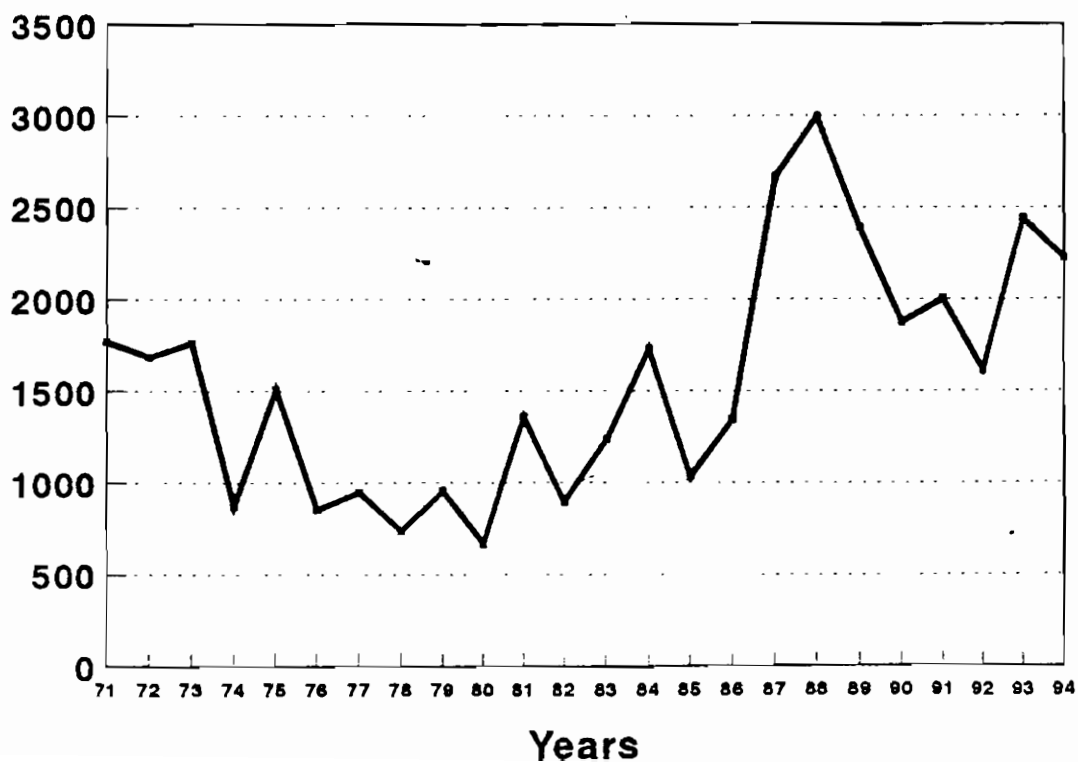
Fig. 21 Yearwise Distribution of Typhoid cases in Ahmedabad 1984-94



**Fig. 22 Yearwise distribution of
Viral Hepatitis cases in Ahmedabad
1984-94**



**Fig. 23 Trend of indoor cases treated at
Infectious Diseases Hospital 1971-94**



The outdoor patients were 3,42,723 in 1971 in all maternity homes but it decreased to 1,14,559 i.e. by 66.57 % (fig. 16). This is a serious situation and the administrators have to think about it. One likely reason for the decline in outdoor patients might be the reduction of maternity homes and secondly due to the preference for private nursing homes. The outdoor patients were maximum in 1972 (3,42,759). Between 1974 to 82 it was between 2 to 3 lakh. From 1983 to 1994 it was between 1 lakh to 2 lakh.

If we see the trend line (fig. 16) of new patients over the 24 years it showed a decrease from 65,593 (71) to 48,451 (94) i.e. by 26.13%. Thus the main reason for the reduction in total out door patients is drastic fall in old patient (76.89%). The old patients are not coming to maternity homes or average number of visits are declining per patient.

The indoor patients reduced by 44.69 % in 1994 (fig 17). The reduction of beds in maternity home may be one reason but besides that people may be preferring to go to private clinics for better services.

Specialized Medical Institutes

Infectious Diseases Hospital

The number of outdoor cases in Infectious Diseases Hospital had increased by 13.05 times from 1,978 in 1974 to 25,816 in 1994. There has been increase of 7,925 patients in one year 1986-87 (fig. 18). This sudden increase had been due to epidemic of viral hepatitis. According to a doctor attached to ID Hospital during epidemics many cases are needlessly referred to ID Hospital thinking it to be infectious disease case. This might be one of the reason for such sudden rise in the number of patients.

It may also indicate increase in epidemic and infectious diseases in the city. Though the total registered cases of gastroenteritis, cholera, typhoid and viral hepatitis (figs. 19, 20, 21 and 22) in Ahmedabad city had reduced in 1994 compared to 1986-89. But the number of patients in infectious diseases hospital had shown increase. This might be due to change in the policy of registration which might have led to the increase in patients in outdoor.

In Ahmedabad city the trend of the gastroenteritis shows that compared to 1984 the number of cases registered had increased in 1994. In Gujarat the number of gastro enteritis cases registered had fallen by more than ten thousand from 40,614 to 28,301 between 1985-95 (SBHI, 1987 & 1995-96). The number of typhoid cases showed decrease in Ahmedabad city from 1985-1994 and was maximum in 1988 (fig 20). In Gujarat state the typhoid cases had shown decrease by more than two thousand from 4,769 to 2,750 between 1985-95. The cholera cases registered in Ahmedabad showed slight increase from 1984 to 1994 but there was a peak in 1988 (fig 21). At state level there was fall in cholera cases from 1985 to 95 but in 1994 there was drastic rise in cases. The number of viral hepatitis cases registered in Ahmedabad city had fallen from 1985 to 1994 though there were some years showing rise in the cases (fig 22). At the state level the trend was similar though the peak years don't match.

The indoor patients treated at infectious disease hospital in Ahmedabad had increased by 25.90% from 1971 to 1994 (fig. 23). The maximum number of patients were 2997 in 1988 due to the epidemic of cholera, typhoid and gastroenteritis. There was a decline in 1992 but in 1993 it rose by 827 which may be due to viral hepatitis. Later, in 1994 it decreased by 213 patients.

Fig. 24 Trends of new & Total OPD cases treated at New Chest Clinic(TB Hospital) of AMC 1971-94

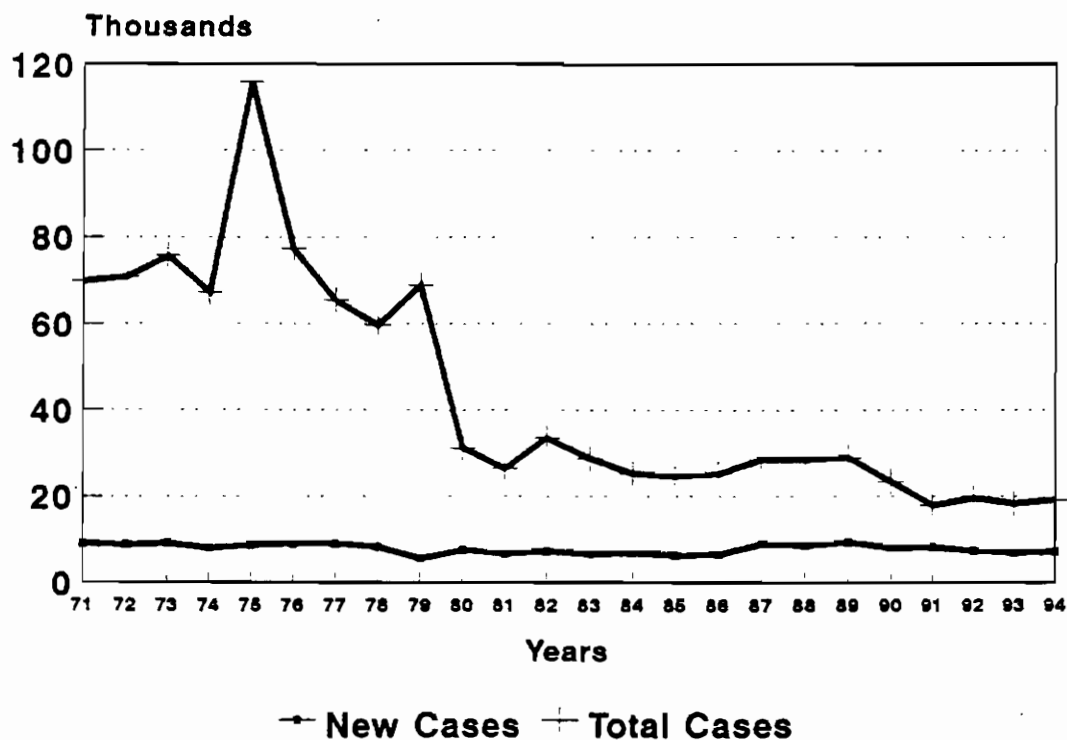


Fig. 25 Trend of Indoor cases treated at New Chest Clinic (TB Hospital) of AMC 1971-94

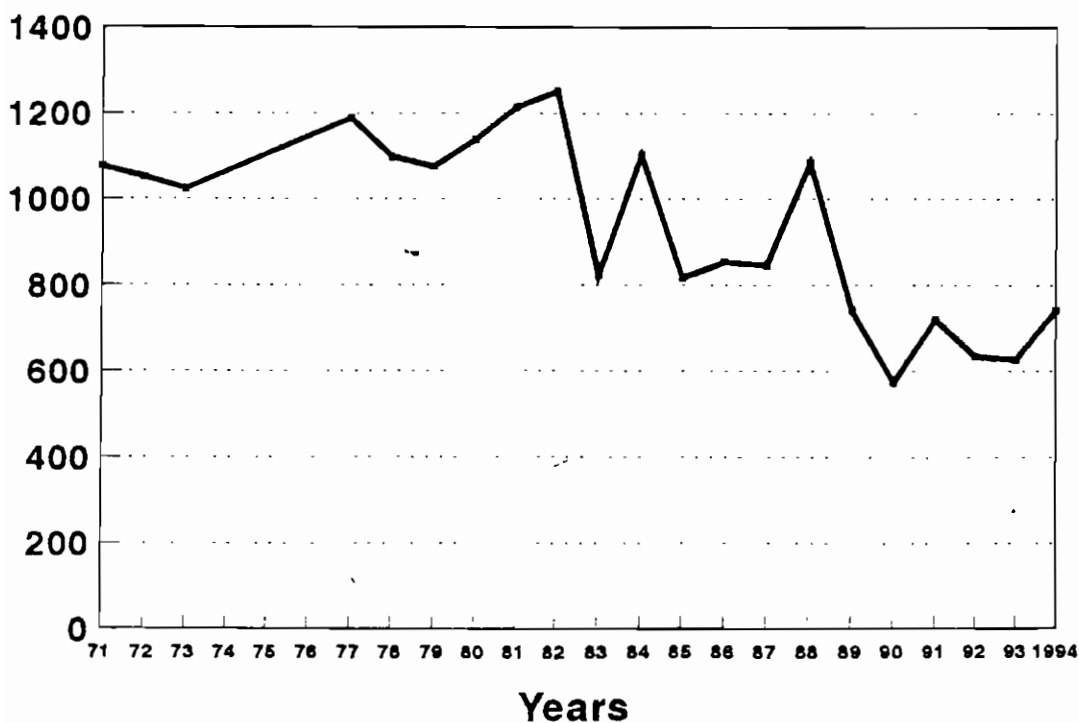


Fig. 26 Trends of Total OPD cases treated at Nagari Eye Hospital 1971-94

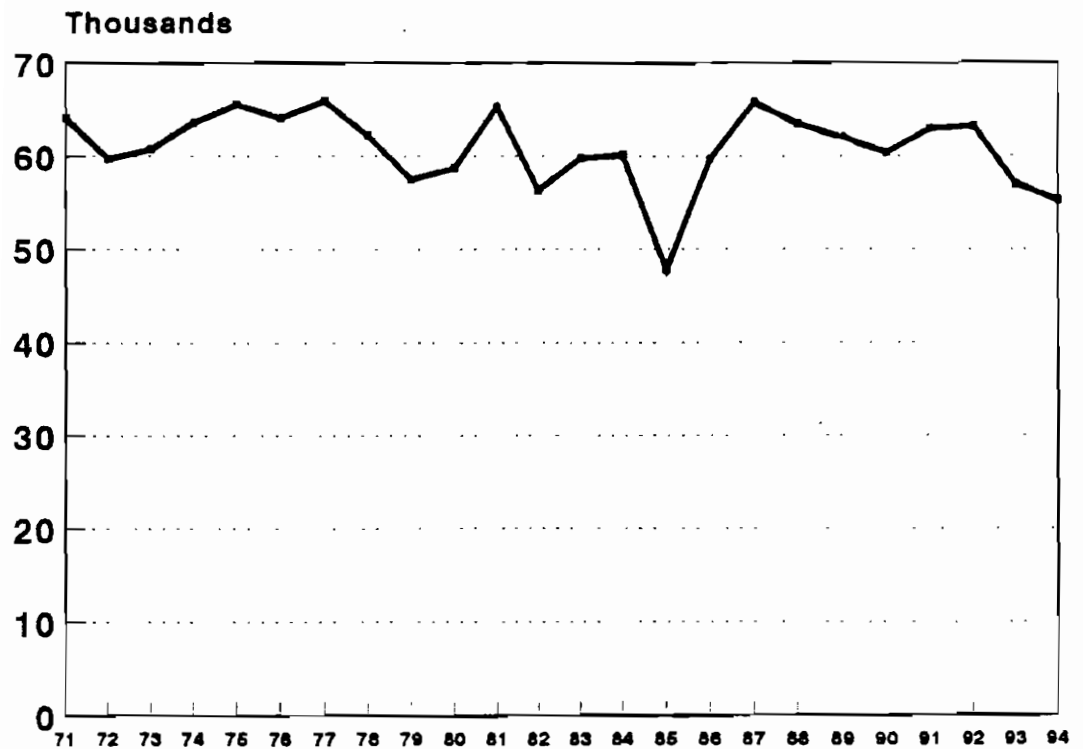


Fig. 27 Trends of Total indoor cases treated at Nagari Eye Hospital of AMC 1971-94

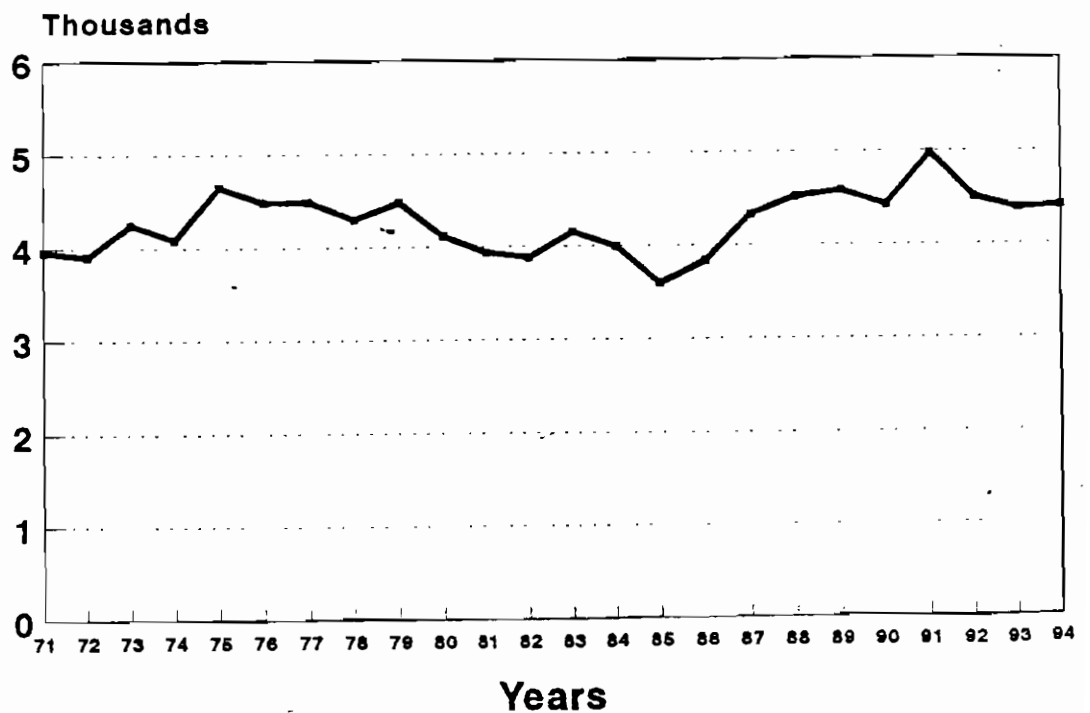


Fig. 28 Trends of total & new cases treated at Dental Clinics under AMC 1971-94

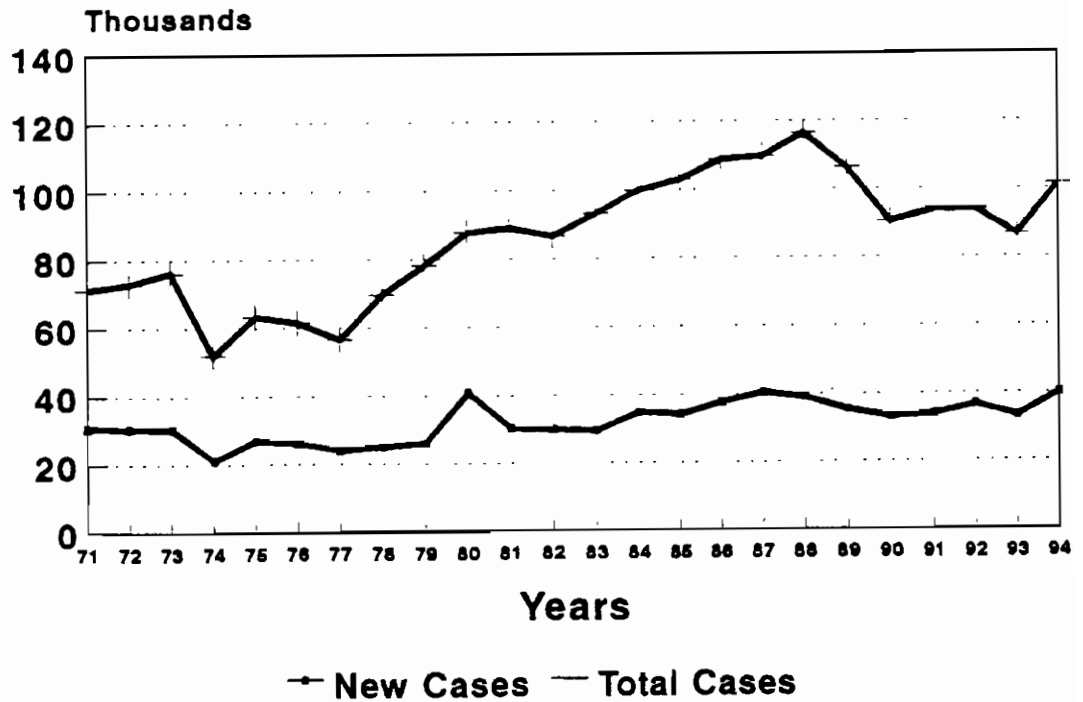
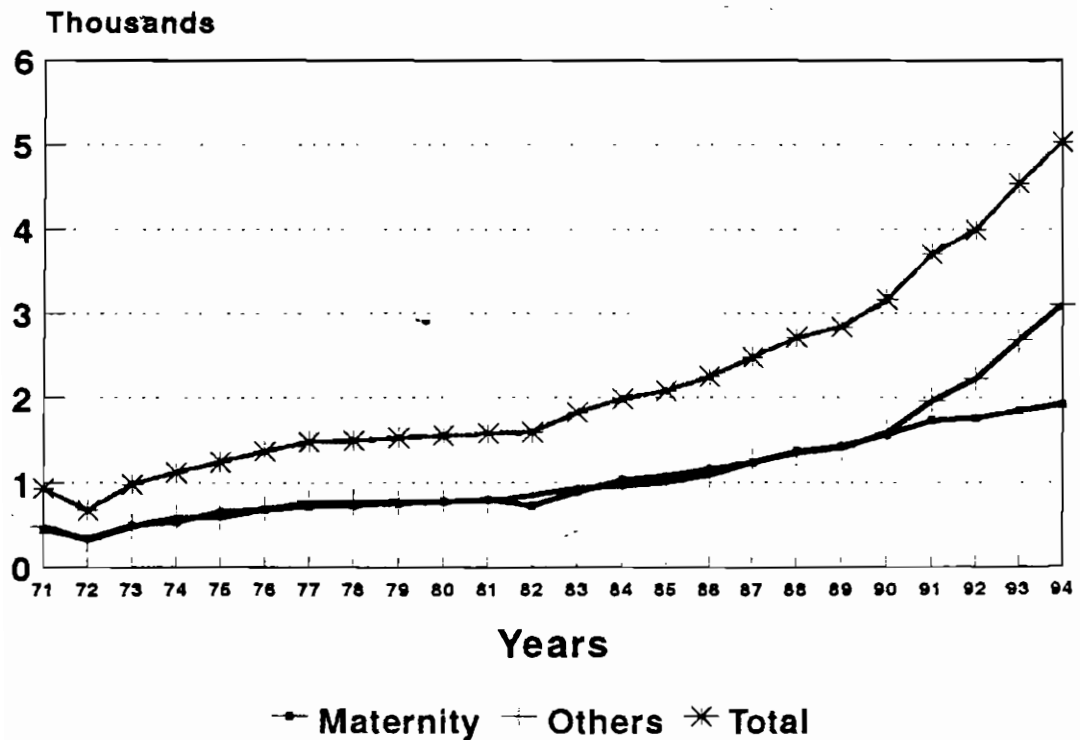


Fig. 29 Trends of beds in Registered Private Nursing homes in Ahmedabad 1971-94



New Chest Clinic

In 1971 the total outdoor patients were 69,852 and in 1994 it declined by 72.67%. The number of outdoor patients touched the peak in 1975 to 1,07,202. Till 1979 there were more than 50 thousand patients but between 1980-90 there were just more than 20 thousand (fig. 24). The drastic fall in outdoor patients was due to the decline in old patients as the decline in new patients was less (-20.69%). This decline could also be due to introduction of short course chemo therapy for TB. Though the air pollution had increased over this time period in Ahmedabad city there is decline in patients which may be due to the TB control program in PHCs and hospitals.

The number of beds in Chest clinic remained constant, 32 over 23 years but the indoor patients had declined from 1076 (1971) to 742 (1994) i.e. by 31.04% (fig. 25). The maximum number of patients were in 1982 (1251). The lowest number of indoor patients was in 1990 (575). But it increased to 742 in 1994.

Nagari Eye Hospital

Nagari eye hospital is a municipal hospital located in western part of the city. The Nagari Eye Hospital had 64,071 patients in 1971 but in 1994 it was 55,191 only i.e. it decreased by 13.86% in 23 years (fig. 26). But compared to other hospitals the reduction is less. After 1992 there is continuous decline in outdoor patients.

The Nagari eye hospital had 80 beds in 1971 but bed strength was raised to 100 in 1978 and till 1994 it was constant. In 1971 there were 3958 indoor patients (fig. 27) but it increased to 4,409 (11.39 %) in 1994. The peak was in 1991 (4,978) which is a surprising event in 1990s as none of the municipal medical institutions had peak in 1990. After 1991 the patients showed decline continuously except in 1994 when there was a slight increase of 26 patients.

Dental Clinics

The dental clinics showed better performance compared to other medical/health institutions. The outdoor patient showed an increase of 22,549 (42.20%) from 1971-1994. There was a rising trend in outdoor patients from 1971 to 1988 though in some years there were decline in patients (1974, 1977 and 1982). In 1988 there was maximum patients. There was sharp decline in 1989 and 1990. But in 1994 there was an increase of 14,799 more patients than 1993.

The new outdoor patients also show a rising trend from 1971-94 and the growth rate was 30.47% (fig. 28). The new patients are about 40% of the total outdoor patient. From 1988 to 1991 there was a fall in new patient which also lead to the decline in total out door patients. One positive sign is that in 1993-94 there was a sharp rise of 6,807 patients. The dental clinics must be offering better services than other medical institutions and thus it is still attracting public.

Registered Private Nursing Homes

There were 933 private nursing homes in 1971 but it had increased to 5037 i.e. by 5.4 times in 1994. Except in 1972 there has been continuous increase in the number of nursing homes. It took 11 years

to increase the registered nursing homes beds from 1119 (74-75) to cross 2000 (85-86). But to add another 1000 nursing homes beds it took only 5 years. It took just 2 years to increase from 3000 to 4000. In year 1994-95, 495 nursing homes were registered. Since 1990 the growth rate of total nursing home registered is faster. Till 1990 the other nursing homes and maternity homes had almost similar growth rates. But since 1990 the other nursing homes are growing at a faster rate than the maternity ones (fig. 29).

Discussion

The Ahmedabad Municipal Corporation has been very progressive in providing curative health services to its citizen through various medical institutions like hospitals, dispensaries, maternity homes etc. Many of these institutions are more than 30 years old. Thus compared to other municipal corporations, AMC has played an important role in health care area. Unfortunately this proactive role seems to have eroded over the years and hence many of the popular health institutions have become less popular over the years.

The present paper tries to study the quantitative performance (cases treated) by the various medical institutions (general and specialized) of AMC in last 24 years (1971-1994). Results of this study are alarming. In these 24 years, though the population of the city had increased by 14 lakh the cases registered in the outdoors of both general and specialized institutions declined substantially (see table 2). The specialized institutions had shown a dramatic decline of 42.35% in its annual case load.

Explanations for decline in patients:

From the data it is clear that utilization of the outdoor medical facilities run by AMC has declined over the years. There can be multiple explanations for the fall in the total number of patients registered in the Municipal Hospitals and dispensaries.

Awareness of the available services

Many people may not be aware of the cheap and good facilities (like cardiology department) available in public institutions as there is no systematic effort to promote these services or even inform the community. In a study done in Madras (Yesudian, 1988, p.231) found that 43% of the households did not utilize the departments in government hospitals as they were not aware of the facilities. The awareness level for the poor people (who mostly requires cheap service) is very low and thus they go to the expensive private clinic which they know as it is near to their homes. Yesudian had found that low class (poor) people complain about bribery, favoritism and doctor's behavior in public health institutions. The high class (rich) people complain on cleanliness and bribery. Such reasons may also be responsible for decline in patient load in Ahmedabad's municipal facilities.

Charging Policy

The one likely reason for this decline in indoor patients might be the increase in the indoor charges in municipal hospitals from Rs.16/day to Rs.32/day. While in the State run hospital Civil Hospital it is only Rs.8/day. Thus many patients may be preferring to go to Civil Hospital than in Corporation run hospitals. The patients have to buy many medicines which are out of stock or not available in store in municipal general hospitals. Thus there is not much difference in the treatment cost between private

and municipal hospitals in the outdoors. Some patients do not like to come to public institutions due to transport cost.

The indoor case registration showed an increase of around 25% both in general and specialized medical institutions over the last 24 years. This rise may be partially attributable to the increase in beds in some institutions and general increase in the population. The cost difference between public and private health service is more for indoor treatment and thus people might be still going to public institutions more for indoor care than outdoor care due to economic compulsions. But the trend for last 5-7 years in most hospitals show that indoor patients have declined substantially. This could be indicating that of late even for indoor care people are not coming to public hospitals. But further research needs to be done to understand reasons for such trend.

The outdoor division of three municipal hospitals, VS General Hospital, LG Hospital, and SCL Hospital, showed quantitatively poor performance compared to the civil hospital. The two hospitals VSG hospital and SCL showed a decline in outdoor patients while LG Hospital showed very slight increase of 3.74%. The substantial increase of outdoor patients in civil hospital in the last 24 years may be due to better quality service, addition of newer specialties, less charges compared to municipal hospitals and perhaps better referral services. Among municipal hospitals LG hospital had showed better performance with positive growth rate in outdoor patients compared to the other two hospitals who have shown negative growth rate over the years. All the three municipal hospitals had positive growth in the indoor case treatment and LG showed the best performance with 64% growth. The V S General hospital had worst performance in terms of growth rate for indoor patients among the three teaching municipal hospitals.

Inadequate Infrastructure

In many of these hospitals the relevant tests cannot be done and the required medicines are not available. The performance of maternity homes is also bad with 67% decline in outdoor cases and 45% decline in indoor patients even though the annual growth of population in Ahmedabad is 3.6%. Over the years the AMC has not developed any additional services or facilities at the Maternity homes which were established 30-50 years ago. Most maternity homes do not have qualified gynecologists. They are run by one MBBS qualified Lady Medical Officer (LMO). There is no laboratory, no arrangement for getting blood, no X ray and not anesthetist to help in operative deliveries if needed. Several of the LMOs living in the maternity home building have moved to better housing in other parts of the city and hence are not easily available all the 24 hours. LMOs are also a frustrated lot due to lack of promotional avenues and many unsolved management problems. All this years of neglect has lead to deterioration of the service in Maternity homes. This coupled with increasing competition from private gynecologists has declined the numbers in the maternity homes. Faced with this situation AMC has closed down some maternity homes and allocated maternity home space for other purposes. Given the fact that almost 20% of deliveries in the city are happening in homes the non-utilization of maternity homes by the citizens is suprising. It is clear that there is a role for well functioning public maternity homes. The challenge is how to manage them effectively to provide the quality of service that people would want to use. Some radical solutions will have to be thought for reviving maternity homes. The new outdoor cases treated at dispensaries showed 30.51% reduction which means that less and less people are coming to the dispensaries to avail the facilities. The outdoor cases in municipal dispensaries had reduced by half (-53.57%) even though the population had doubled. The referral hospitals which started in 1984 showed a reduction approximately 60% cases both in indoor and outdoor.

Among the specialized medical institutions the infectious diseases (ID) hospital showed substantial positive growth both in indoor and outdoor patients. The growth in outdoor patients was very high which may be due to the large number of people being prone to water borne diseases (like typhoid, cholera etc.). The graphs for gastroenteritis and cholera show clear epidemic in 1988 while that for Typhoid shows two peaks one in 1988 and second in 1991. It is surprising that viral hepatitis shows peak in 1987 and then in 1993. This indicates that different waterborne disease show a different epidemic cycle. It is not clear how much of this could be due to admission and referral policies as compared to natural epidemiology of the disease as this data is only from one ID hospital. It is clear that over all this also indicates that the corporation may have failed in providing clean water and sanitation facilities to rapidly increasing populations in the city leading to increase in infectious diseases. As in this hospital some of the vaccine preventable disease like diphtheria and measles are also treated in rise in patients may also indicate poor vaccination coverage or failure of vaccine to prevent these disease due to poor potency of vaccine. One possibility is that increase in patients may be due to change in treatment and referral policies of other hospitals regarding infectious disease, change in admission policy of the ID hospital and changed people's perceptions regarding this hospital after the 1988 epidemic. Detailed study of this apparent increase in infectious disease should help clarify the causes of it.

The dental clinics had shown positive growth rate both in total outdoor cases and new outdoor cases which is encouraging given the fact that during these years many more private dentists have opened practices in Ahmedabad. It also indicates the need to further develop public dental services in the city. Over this period the number of dental clinics have not increased in the city. City of 3 million population having only 4 municipal dental clinics (each one with one dentist), indicates the low priority that public health administration has given to dental services.

The New Chest Clinic (NCC) which mainly deals with TB cases had a drastic decline of 72.67% in total outdoor patients but the new cases remained almost the same. This indicates that now less and less of follow up visits are recorded. This could be due to shorter (6-8month) chemotherapy which was introduced only in mid 1980s. Thus most of the decline in total cases at NCC precedes the introduction of short course therapy for TB. Decline in indoor cases of TB also indicates that more and more cases are treated in early stages and hence admission for severe disease is not needed. Unfortunately new cases of TB have remained same indicating that new infections and incidence of disease may be remaining static. Given that HIV and AIDS has established in India control of TB acquires new urgency. Unless effective TB control measures are taken it may increase as has happened in many other countries.

Quality of Services and Competition from Private Sector

The discussions with some knowledgeable doctors indicated that the people are nowadays ready to pay fees for good services, but they want quality care and also do not want to waste time in public hospitals queues. This may be due to increasing paying capacity in the cities and increasing value of time in modern society. This has lead to rapid expansion of private health care market in Ahmedabad. The registered private nursing homes and hospitals showed sharp increase in their numbers specially after 1990s. Within 4 years (1990-94) around 237 nursing homes were added in the city. The number of beds showed an increase of 439.87% in 1971 to 94.

Other main reasons could be lack of personal care and poor quality of care in the municipal run health institutes. The trend of the new patients are constant while that of old patients had shown drastic fall. The old patients may not be coming back for check ups. The reason for not coming can

be many. There may be better cure rates and thus old patients are not coming. They may not be satisfied with the service and may prefer to go to private doctor near their residence.

The municipal hospitals take away lot of time in queues and thus many patients prefer to go to private clinics and nursing homes for quick service. A study done by Dr. Mavalankar in 1986 showed that an OPD patient in medicine department in VS Hospital used to take 75.9 minutes on an average and the time used for doctors examination was only 2-3 minutes, rest was sent in waiting, other services and 12.4 minutes were wasted. This has further boosted the private sector in health care.

Yesudian (1988, p.241) in his study showed that low class people like to go to private clinic for good treatment and also because it is near to their house. The rich like to go to private clinics as they get good treatment, often the doctor is known, near to their house and also they can afford to pay. It is also a common belief and may be based on fact that staff including doctors in public hospitals do not pay personal attention to the patient while in private patient gets that as he directly pays the doctor.

A recent survey by the Centre for Environment Planning and Technology (CEPT) (Shah R.,TOI, 5.5.96) showed that in poor areas 85% of the people in Ahmedabad are going only to private doctors. About 13% go only to public doctors while 2% go to both. The private nursing homes are increasing by leaps and bounds not only within AMC limit but also in and around the periurban area outside AMC limits. The villagers thus prefer to go to the nearby private doctor for convenience rather than coming to a public hospital or dispensary in the city because time and transport cost involved. The number of nursing homes are increasing in order to meet the rising demand of the population who are much bothered about quality of care and time spent in seeking care. Most people are no more bothered to pay for the better services offered by private clinics. This increase in private hospitals may also be due to decrease in quality of public services and the policy of charging in municipal hospitals.

The general medical institutions had maximum outdoor cases in 1973 while the specialized medical institutions had maximum outdoor patients in 1971 (table 3). The highest number of indoor cases in general medical institutions were in 1988. This may be due to epidemics in various water borne diseases (gastroenteritis, cholera and typhoid) in the city. In 1988 many hospitals like VSG, LG and Infectious Diseases Hospital also had maximum patients due to epidemic of gastroenteritis. Many medical institutions like municipal dispensaries, chest hospitals, Nagari Eye Hospital and maternity homes had maximum number of patients in early 70s and since then patients have declined over the years. Only the infectious diseases hospital had peak registration in 1990s. Thus it is observed over the years the medical institutions run by AMC are having less utilization as the demand for the public medical services are decreasing. This is a major cause for concern.

Motivation amongst the staff

A study of the general surgical department of VS Hospital (Saha. C, 1995) pointed out various reasons which may be responsible for decline in number of patients. The surgical department or for that matter the hospital does not specify any annual or long term goal in terms of patients to be treated or level of care to be provided. There was no annual performance review in terms of quantity or quality of service. The administration do not have proper coordination with other departments. The

administrative department does not make future strategic plans. There is general lack of motivation among the staff and no training is given to them to update the knowledge. There are no rewards for good service or performance and no punishment for poor work. The class four staff neglect their duty once they become permanent employees and their behavior with the patient also turns bad. Due to strong unions and political interference in the day to day running of the hospital the administration is helpless in many matters of discipline. There is no periodic performance review for the staff. The patients were disgusted with the inhuman behavior of the staff and also complained about the time wasted in queues and for running in different departments (X-ray, other tests, etc.). Often the relevant medicines are not available from the hospital stores. These were the problems in VS hospital, other hospitals may not be very different. But some hospitals may have better management or may be located in a more strategic area and hence there may be individual difference which need to be explored in more detailed studies of each hospital.

The municipal authorities are spending money for the curative health services but the number of users are declining. Most employees also seem to be unhappy with various problems in the working of the hospitals and other medical institutions. This is a serious situation where the management has to take a fresh look at the health services in the city. Some radical policy and management shifts may have to be instituted which will lead to better motivation among the staff leading to better treatment of the patients. Policy of pay and promotions related to performance and more managerial inputs in the administrative cadres may help turn around the municipal medical institutions.

The AMC should also concentrate on provision of preventive health services such as clean water, sanitation, vaccination, Maternal health care. Thus if proper preventive measures are taken then there will be less requirement of curative services. At the same time AMC may have to focus on improving quality of services and may be reconsider its policy of charges for health care.

Conclusion

The study revealed that barring few exceptions the use of public medical institutions run by AMC is declining over last 24 years. This is surprising as the population of the city has increased and the sanitary conditions have not improved substantially. This indicates that more and more people are opting out of the publicly funded health systems. Some personal observations and discussions with doctors working in municipal hospitals indicates some of the reasons for this decline. The over all reason seems that the management of the hospitals have not kept pace with social change, customer preferences and changing organizational realities. In the era of increasing public expectations, deterioration of service quality, increasing charges and increasing competition from private nursing homes and clinics have eroded public confidence in AMC hospitals. Thus increasingly the money used for the curative health services is producing decreasing results due to low and lower utilization of AMC health facilities.

It is necessary to look in-depth at the causes of these trends. Each medical institution must be having some general problems and some specific problems. It is required to study the managerial problems of each institute and find the reasons for poor quantitative performance for specific institutions. Future research can try to judge the qualitative performance of these institutions and public perceptions regarding health care choices. These type of studies can help in finding ways for better management of the municipal health institutions.

To turn around medical institutions some radical policy and management changes may be needed. First of all the hospitals should try to understand their clients and develop a long term service

strategy. Quality improvement should be central along with right charging and subsidy policies. The staff and management pay, compensation and benefits should be linked to performance, quality and client satisfaction. Better work should be rewarded and poor work punished. The public medical institutes should try to regain the confidence by better human and technical quality of services. Hospital management must understand the competition offered by private and trust hospitals and try to develop a strategy to served the selected poor target group.

The municipal councilors and the public interest groups can act as pressure groups and pressurize the public health institutions to offer better services which is their duty. The municipal councilors at the ward level can see the performance of the health institutions in their specific area rather than interfering in the petty day to day administration of the hospital.

If the public, municipal councilors and the health institution authorities try collectively with some help from professional management experts the management of the hospital can be improved and the decline in the number of cases can be reversed. If this is done then these health institutions will be able to provide quality service to the citizens especially to the poor for which they were created.

Table 2

**Percentage Growth Rate in the Cases Treated in various
Medical Institutions In Ahmedabad 1971-1994**

Medical Institutions	New Outdoor Cases (%)	Total Outdoor Cases (%)	Indoor Cases (%)
General Medical Institutions	NV	-25.30	+24.98
Specialized Medical Institutions	NV	-42.35	+28.38
V.S.G. Hospital	-16.1	-28.36	+10.71
L.G. Hospital	+27.09	+ 3.74	+64.59
S.C.L. Hospital	+28.34	- 9.05	+16.56
Civil Hospital *	NV	+113.77	+32.76
Municipal Dispensary.	-30.51	-53.57	NA
Referral Hospitals (1984-94)	-29.57	-61.28	-60.27
Infectious Diseases Hospital	NV	+1205.15#	+25.9
Chest Hospital	-20.26	-72.67	-31.04
Nagari Eye Hospital	NV	-13.86	+11.39
Municipal Maternity Homes	-26.13	-66.57	-44.69
Dental Clinics	+30.47	+42.2	
Percent Growth Rate of Number of Private beds			
	Maternity	Others	Total
Registered Private Nursing Homes	+329.18	+542.56	+439.87

Sources:

- A.M.C. Statistical Outline (1991-92) ,A.M.C. Data 1995

Abbreviations:

* Data for 1982-86 not available

Analysis based on 1974-94 data

N.A. Data not applicable

N.V. Data not available

Table 3

Peak Case Registration Year and percent decline in cases from the peak year to 1994 for Various Medical Institutions in Ahmedabad.

Medical Institutions	New Outdoor Cases	Total Outdoor Cases	Indoor Cases
General Medical Institutions	NV	1973 (37.4)	1988 (27.6)
Specialized Medical Institutions	NV	197 (42.4)	1981 (31.3)
V.S.G. Hospital	1979 (46.2)	1972 (44.8)	1988 (30.7)
L.G. Hospital	1988 (24.8)	1983 (37.8)	1988 (19.8)
S.C.L. Hospital	1988 (19.1)	1976 (50.9)	1981 (28.8)
Civil Hospital *	NV	1993-94 (nil)	91-92(12.2)
Municipal Dispensaries	1973 (37.4)	1973 (54.6)	NA
Referral Hospitals (1984-94)	1986 (42.7)	1985 (62.7)	1984 (60.3)
Infectious Diseases Hospital (1974-94)	NV	1994 (nil)	1988 (25.7)
Chest Hospital	1989 (22.6)	1975 (83.5)	1982 (40.7)
Nagari Eye Hospital	NV	1977 (16.3)	1991 (11.4)
Municipal Maternity Homes	1972 (29.2)	1972 (66.6)	1973 (47.5)
Dental Clinics	1980 (1.78)	1988 (12.8)	
Percent Growth Rate of Number of Private beds			
	Maternity	Others	Total
Registered Private Nursing Homes	1994-95 (nil)	1994-95 (nil)	1994-95 (nil)

Sources:

- A.M.C. Statistical Outline (1991-92)
- A.M.C. Data 1995

Notes:

* Data for 1982-86 not available

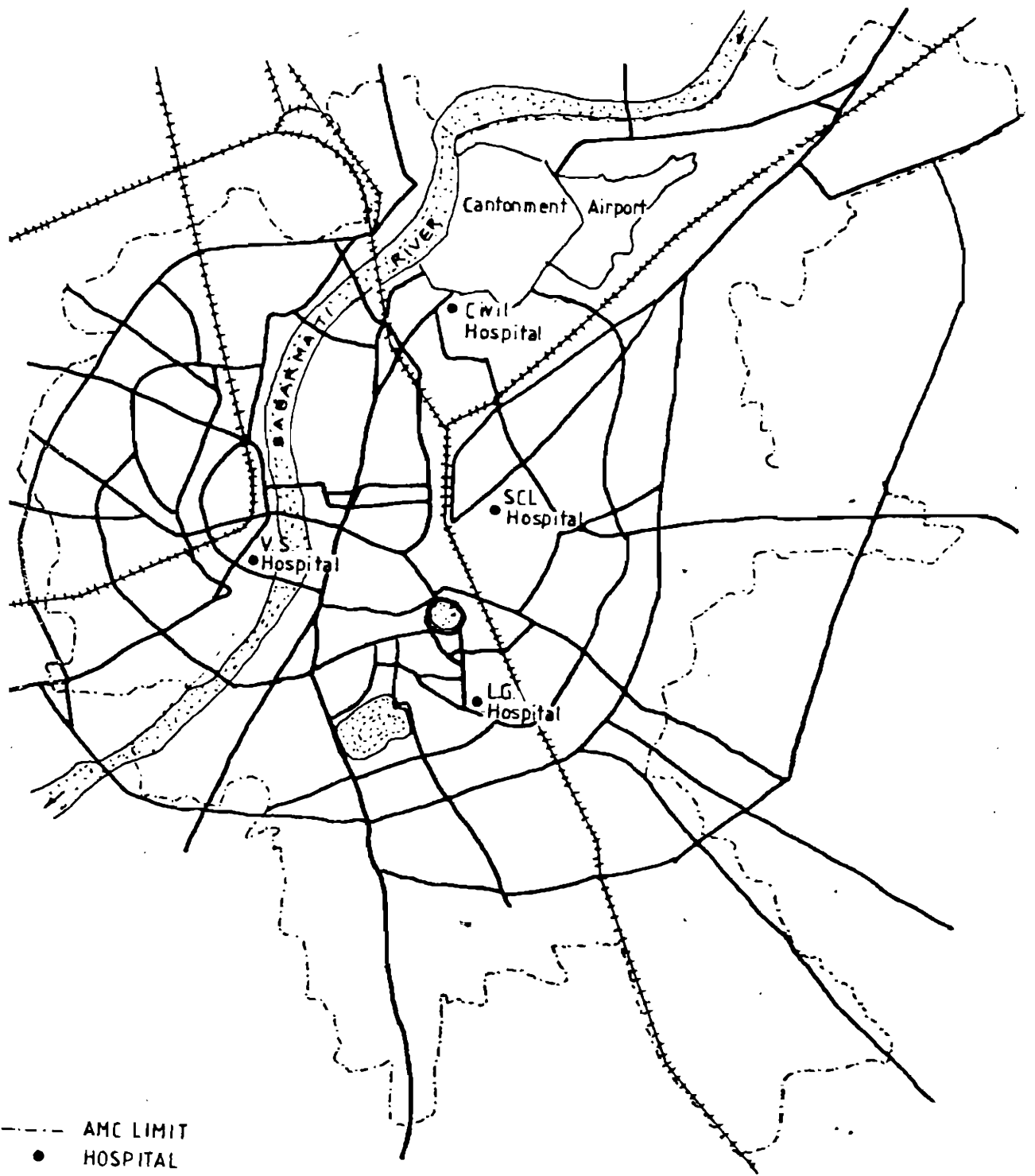
N.A. Data not applicable, N.V.- Data not available

Data on the parenthesis shows percent decline of cases from the peak year till the latest year of data (1994).

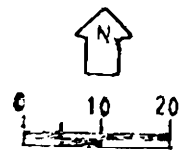
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