

# PREVENTIVE MEDICINE DEPARTMENT; SERVES BETTER IN HOSPITALS

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## PROF. DR. MUHAMMAD AYAZ BHATTI

Head of Department of Community Medicine  
Islamic International Medical College  
Rawalpindi

## PROF. DR. MAHMOOD UR RAHMAN

Department of Community Medicine  
Army Medical College, Rawalpindi

**ABSTRACT: Objectives:** To measure the current status of preventive activities in civil and military hospitals. To compare the quantum of preventive and curative activities in the hospitals. To make recommendations for promotion of preventive activities to reduce the curative burden from the hospitals. **Study Design:** This was a cross-sectional study. **Sampling Technique:** Universal sampling. All the major military and public sector hospitals having bed strength more than 400 in Rawalpindi were included in the study. All the preventive and curative work was taken into account. **Methodology:** A structured questionnaire was developed and data regarding the quantum of work was collected from all the four major Military and civil hospitals having bed strength more than 400 beds through registers and annual reports of the hospital and was analyzed in the form of frequencies, tabulation, cross tabulation, percentages and was displayed in tables and graphs using SPSS (10.5), Microsoft Excel and calculus. **Results:** Only seven percent work is preventive and ninety three percent is curative. In the preventive activity MH is marginally higher than the rest of the hospitals. In all the hospitals among the preventive activities 31% are antenatal visits, 20 % tetanus toxoid injection, 19% BCG, Growth monitoring 13%, Measles injection 11% and family planning 6% in all the hospitals. Ante natal activities in the army sector hospitals are more prominent 39-44% and also in the public sector 17-26%. Next to the antenatal are tetanus toxoids to pregnant ladies which range from 16-35% in military and 16-20 % in the public sector hospitals. Growth monitoring is more efficiently carried out in the Rawalpindi General Hospital i.e. 17% while in others 7-12%. Family Planning services are delivered very poorly only 9% in RGH and 6% in DHQ, zero % in CMH and 5% in MH. Measles vaccination is carried out efficiently in DHQ 27%, 11% in RGH and 8% in MH and again poorly 3% in CMH. BCG is 27% in DHQ, 20% in MH, 17% in RGH and 10% in CMH. **Conclusions:** The study show that hospitals are showing very poor performance in preventive aspect and this is the reason that countries like Pakistan are facing economic burden on the national exchequer and this burden will keep on increasing if no appropriate action is taken.

**Key words:** Preventive Medicine, Hospital Management, Growth Monitoring

## INTRODUCTION

Preventive medicine or preventive care refers to measures taken to prevent diseases, (or injuries) rather than curing them or treating their symptoms. The term contrasts in method with curative and palliative medicine, and in scope with public health methods which work at the level of population rather than individual<sup>1</sup>. While entering into the new millennium, Pakistan needs to assess its position on the health status of its nation. The health of its 170 million citizens is among the poorest in the world and its number is growing at the rate of 2.6% per annum<sup>2</sup>. At this rate the population will double by the year 2027. Is the country prepared for such a challenging burden? Forty percent of children under-five-years of age are malnourished. Twenty-nine percent of population lives in poverty and 12% are surviving on less than one dollar a day<sup>3</sup>. Lack of proper access to water and sanitation translates into high incidence of infectious disease targeting the children. One out of every tenth child born does not live to see his/her first birthday. Twenty-five percent of all children born are of low birth weight, i.e., less than 2.5 kg. These children are usually

born to mothers who are malnourished. Almost 50% women of child bearing age suffer from nutritional anaemia<sup>4</sup>. In contrast to Western women, all Pakistani women are at increased risk of dying due to pregnancy-related causes. Maternal mortality rate in Pakistan is estimated to be between 340 and 600 per hundred thousand live births<sup>5</sup>. Maternal mortality ratio in rural Baluchistan is 800 maternal deaths to 100,000 live births, compared to the national average of 340 per 100,000<sup>6</sup>. In fact, Pakistan lags far behind most developing countries in women's health and gender equity, of every 38 women who give birth, one dies. This means that one pregnant woman dies every twenty minutes mostly due to avoidable causes<sup>7</sup>. The infant mortality rate (76 per 1,000) and the mortality rate for children under five (101 per 1,000 births) exceed the averages for low-income countries<sup>8</sup>. Although use of contraceptives has increased, fertility remains high at 4.5 births per woman, and population growth rates are much higher than elsewhere in South Asia<sup>9</sup>.

The underlying problems that affect health poverty, illiteracy, women's low status, inadequate water supplies and sanitation persist. Pakistan is committed to the goal of making its population healthier, as evidenced by the National Health Policy<sup>10</sup>. The entire public health care system provides services to 20% of the population, the remaining 80% being served by the private sector<sup>11</sup>. Despite this, the private sector is not well documented. 75% of the private sector hospital beds are located in the nine largest cities. Pakistan is contributing 8% (300,000) new-borne deaths to the annual burden of 4 million neonatal deaths worldwide while two third (200000) each year can be prevented<sup>12</sup>. Fifty percent of the disease burden is by communicable diseases (38.4%)<sup>13</sup>. Among children these are respiratory tract infection, diarrhoeal diseases, measles, malnutrition, malaria, pertussis, tetanus, and poliomyelitis. These conditions have effective and affordable preventive measures and treatments<sup>14</sup>.

The non communicable disease category also contributes to the total disease burden. This includes chronic diseases such as cardiovascular, Diabetes, Hypertension, respiratory diseases and malignancies which are expensive to treat<sup>15</sup>. Interventions directed to raise public awareness about causal factors, disease prevention and screening techniques for selected health problems would significantly improve quality of life and lower the mortality rate. Most of these deaths could be prevented using simple affordable measures. Seven out of ten childhood deaths in developing countries can be attributed to just five main causes, or often some combination of them<sup>16</sup>, and around the world, three out of every four children who seek health care are suffering from at least one of these conditions pneumonia, diarrhoea, malaria, measles and malnutrition.

Major community health problems that could easily be avoided or limited through preventive health services or health education in Pakistan are Communicable Diseases like malaria, viral hepatitis including hepatitis B and C, enteric fever, tuberculosis, scabies, mumps, chicken pox, MCH Problems, Diarrheal diseases, inadequate antenatal care, child immunization, malnutrition and multiple pregnancies. Chronic Illnesses,

like cardiovascular diseases, arthritis, diabetes mellitus etc.

This was a cross-sectional study. The purpose of the study was that with the advancement in scientific knowledge it has now become possible to control diseases by specific measures such as blocking the channels of transmission, e.g. quarantine, water purification, pasteurization of milk, protection of foods, proper disposal of sewage/ hospital waste, destruction of insects by disinfections, early detection of cancers by screening, and millions can be saved by use of immunization. Lot of people come to the hospitals to get relief of their miseries and that is the time when iron is hot and why not to hit them with the weapon of prevention for securing their future and safeguard their health by themselves by empowering them with health education and other preventive methods.

## MATERIALS AND METHODS

The aim of the study was to improve the health of the community by strengthening the preventive role of hospitals. Objectives were:-

- a. To measure the current status of preventive activities in civil and military hospitals.
- b. To compare the quantum of preventive and curative activities in the hospitals.
- c. To make recommendations for promotion of preventive activities to reduce the curative burden from the hospitals.

## Study Design

This was a cross-sectional study.

## Data Collection Tools & Procedure

A structured questionnaire was developed and data regarding the quantum of work was collected from different hospitals through registers and annual reports of the hospital.

## Sampling & Setting

All the major military and public sector hospitals having bed strength more than 400 in Rawalpindi were included in the study.

**Duration of Study**

The study was conducted from March 2007 to June 2007.

**Data Analysis**

The data was analyzed in the form of frequencies, tabulation, cross tabulation, percentages and was displayed in tables and graphs using SPSS (10.5), Microsoft Excel and calculus.

**RESULTS**

Data was collected from Rawalpindi General Hospital, District Head quarter Hospital Rawalpindi, Combined Military Hospital Rawalpindi and Military Hospital Rawalpindi, all are 400 or more bedded hospitals. As the hospitals which are tertiary level have more attention towards the curative activities, they attract large quantum of patients and clients. People as well as the health care providers are more centred towards the curative aspect.

**Table-I. Preventive and Curative Work In during the year 2007 in Hospitals**

	Preventive work	Curative work	Total	Preventive work %age	Curative work %age
RGH	31468	428598	460066	6.83	93.17
DHQ	15968	226000	241820	6.54	93.45
CMH	14340	249432	263752	5.43	94.57
MH	40296	473652	515028	08	92
Total	102072	1377682	1479754	07	93

**Table-II. Preventive Activity in the Year 2007**

Preventive activity	Workload					%age
	RGH	DHQ	CMH	MH	Total	
Injection BCG to newborn	5276	4292	1416	8076	19060	19
Injection measles at 9 months	3568	4240	488	3252	11548	11
Family planning clients	2944	948	-	1864	5756	06
Growth monitoring done	5200	1224	1192	5260	12876	13
TT vaccine to pregnant ladies	6200	2540	4960	6280	19980	20
Antenatal visits	8280	2724	6284	15564	32852	31
Total	31468	15968	14340	14340	102072	

**Table-III. Detailed Analyses of Individual Hospitals**

Preventive activity	Injection BCG	Injection measles	Family planning	Growth monitoring	TT vaccine	Antenatal	Total
RGH	5276 (17%)	3568 (11%)	2944 (9%)	5200 (17%)	6200 (20%)	8280 (26%)	31468
DHQ	4292 (27%)	4240 (27%)	948 (6%)	1224 (7%)	2540 (16%)	2724 (17%)	15968
CMH	1416 (10%)	488 (3%)	-	1192 (8%)	4960 (35%)	6284 (44%)	14340
MH	8076 (20%)	3552 (8%)	1864 (5%)	5260 (12%)	6280 (16%)	15564 (39%)	40269

They pay less attention and are less concerned with the preventive activities. Preventive activities included in the study are BCG, tetanus toxoid and Measles Immunization, growth monitoring, family planning and antenatal care. The curative work includes giving treatment to all in-door and out-doors patients visiting the health facility. As collection of data for the whole year is very difficult and cumbersome due to time, labour and financial constraints, therefore three months data was collected and then it was multiplied with four to get the number of whole year. By doing so the total number is as under:-

A very small portion of preventive work is done by the tertiary level hospitals. Both in civil as well as military set up as the priority is curative aspect. No screening programme for early detection of diseases is going on in any of the hospitals. Only seven percent work is preventive and ninety three percent is curative. From the table it can be depicted that almost all the hospitals are at very low level of preventive work but on the other side, lot of curative work is being done by the every hospital. In the preventive activity MH is marginally higher than the rest of the hospitals. Though the preventive work carried out is small but the list of activities includes all the important aspects of preventive health.

The compilation of total preventive work done at 4 teaching hospitals of Rawalpindi shows that at each level the preventive activities carried out are injection BCG to newborn, Injection Measles at 9 months, family planning services, growth monitoring of the children, tetanus toxoid vaccine to pregnant ladies and ante natal visits. Preventive Work done in the hospitals in the 3 Months is shown in the table:

Among all the hospitals the percentage of quantum of preventive activities calculated is 31% antenatal visits, 20 % tetanus toxoid injection, 19% BCG, Growth monitoring 13%, Measles injection 11% and family planning 6% in all the hospitals.

In the detailed analysis Ante natal activities in the army sector hospitals more prominent 39-44% and also in the public sector 17-26%. Next to the antenatal are tetanus toxoids to pregnant ladies which range from 16-35% in

military and 16-20 % in the public sector hospitals. Growth monitoring is more efficiently carried out in the Rawalpindi General Hospital i.e. 17% while in others 7-12%. Family Planning services are delivered very poorly only 9% in RGH and 6% in DHQ, zero % in CMH and 5% in MH. Measles vaccination is carried out efficiently in DHQ 27%, 11% in RGH and 8% in MH and again poorly 3% in CMH. BCG is 27% in DHQ, 20% in MH, 17% in RGH and 10% in CMH.

## DISCUSSION

Globally in 2006, expenditure on health was about 8.7% of gross domestic product, with the highest level in the Americas at 12.8% and the lowest in the South-East Asia Region at 3.4%. In Pakistan total expenditure on health as percentage of Gross Domestic product is 2.4. There is tremendous variation ranging from a very low US\$ 31 per capita in the South-East Asia Region to a high of US\$ 2636 per capita in the Americas<sup>17</sup>. The share of government in health spending varies from 76% in Europe to 34% in South-East Asia. Where government expenditure in health is low, the shortfall is made up in low-income countries by private spending, about 85% of which is out of pocket. This means that payment is made at the point of accessing health services. Such payment does not allow for pooling of risks and leads to a high probability of catastrophic payments that can result in poverty for the household. Total expenditure on health is 2.6 % of GDP (2009)<sup>18</sup>. Developing countries such as Pakistan is increasingly exposed to conditions sometimes labelled as "diseases of affluence" while struggling to control their continuing problems of malnutrition and infectious diseases associated with Underdevelopment<sup>19</sup>. Resources allocated towards various preventive programs have always been meagre. The World Health Organization (WHO) recommends that at least 5% of Gross Domestic Product (GDP) should be allocated to the health sector, in contrast to these recommendations only 0.6% of our GDP is dedicated for the health sector. Most of the resources generated out of this allocation are focused on treatment of various diseases rather than their prevention<sup>20</sup>. Rising Infant Mortality Rate (IMR) and Under Five Mortality Rate has inundated our national development and progress for long time and these parameters continue to be staggering high. Stress on prevention, employing better

maternal and child health care is the only longer term and sustainable solution to bring these rates down and hence achieve the Millennium Development Goals set forth at the turn of the century. Implantation and adherence of standards for only a few preventive programmes like provision of safe drinking water, distribution of ORS packets, vaccination against seven killer diseases and good sanitation are the keystones towards a road of better health of the nation.

The study highlights that seven percent which is equivalent to nothing where thousands of patients are treated are given preventive treatment or advice. The reason behind is the priorities or lack of understanding that how this big amount of patients can be dealt efficiently. The enemy (the disease) should be attacked at its den not when it has started hunting our homes. A well established and staffed preventive medicine department in any given hospital can go a long way in reducing the work load on the curative services. Curative services are heavy on resources and greater financial investments lead only to small long term gains in the health status. Imparting health education is a totally neglected aspect of our medical practice and no printed material is available in OPDs which is provided by government agencies. Different pharmaceutical companies supply this material for their advertisement. Resultantly, the quality and content of this material is not standardized and is directed towards personal/organizational promotion rather than actually imparting important information about health care. Health education about diarrhoea, dysentery, ARI, tuberculosis, diabetes etc can again serve to reduce the huge curative workload on hospitals. More and more specialized centres of excellence for curative services are being established both in the public and private sector. Many cost benefit and cost effective analyses have been conducted in this regard. One such study quotes that cost of one bone marrow transplant is adequate to conduct and implement a health education program for prevention of thalassaemia for the whole community. The examples of economic gains achieved by investing in preventive rather than curative programs are many. Investment in preventive strategies in pennies prevent millions of pounds for cure in future, e.g. prevention of hypertension prevents strokes, ischaemic heart

diseases and renal failures which cost thousands of dollars. The study provides grounds for expansion of preventive activities at tertiary level by establishing preventive medicine departments in the vicinity of hospitals to impart preventive strategies to reduce the work load and safeguard the health of the masses.

## CONCLUSIONS

It is quite evident that communicable as well as non communicable diseases in addition to inefficient health care system, poor quality of care affecting the major portion of the community, place a grave economic burden on the national exchequer and this burden will keep on increasing if no appropriate action is taken. The evidence is clear that action is urgently needed to avoid the adverse outcome. There is simply no excuse for allowing diseases to continue taking millions of lives each year when the scientific understanding to prevent these diseases and deaths is available now.

## RECOMMENDATIONS

The knowledge exists to deal with the threat and to save millions of lives. It is vital that an integrated and comprehensive preventive approach should be adopted now to reduce risks and curb the epidemics. The range of activities can be given and fruitful results can be obtained by establishing Preventive Medicine Department in Hospitals. The department should serve for Health Education and Promotion Programmes, Behaviour Modification, Strategies to Improve Nutrition, Prevention of hypertension, ischaemic heart diseases, diabetes mellitus, obesity and their complications. Diseases Control by Investigating cause and source, Preventive Paediatrics Reproductive Health, Occupational Diseases Prevention, Control of Hospital Acquired Infections Mental Health, Preventive Geriatrics, Screening/ Counselling, Collection of Vital Statistics, Research and Development using epidemiology and Biostatistics, and Public Relations. If all this can be done efficiently, the health of the nation can be revolutionized.

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**Correspondence Address:**  
 Prof. Dr. Muhammad Ayaz Bhatti  
 274 The Mall, Peshawar Road  
 Rawalpindi  
 ayaz.bhatti@riphah.edu.pk

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Those who stand for nothing  
 fall for anything.

*Alexander Hamilton*