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Mubashir Zafar

*Dow University of Health Sciences*

Muhammad Ashar Malik

*Aga Khan University, ashar.malik@aku.edu*

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# Emerging Challenges and Health System Capacity: The Case of Non-Communicable Diseases in Pakistan; a Review

Mubashir zafar<sup>1\*</sup> and Ashar Malik<sup>2</sup>

<sup>1</sup>Dow University of Health Sciences, Karachi, Pakistan

<sup>2</sup>Department of Community Health Sciences, Agha Khan University, Pakistan

## Abstract

**Background:** Pakistan is facing double burden of disease and the contribution of mortality by non-communicable diseases has over numbered the communicable diseases. The focus of health system of Pakistan is inclined more towards communicable disease and maternal & child health. Therefore, there is a need to review health policy, health sector budgeting and health setup in order to meet the needs of healthcare in context of non-communicable disease.

**Objective:** To review the health system capacity to manage the emerging challenge of non-communicable diseases in Pakistan.

**Methodology:** A thorough literature search on PubMed and Google Scholar was done. Reports from W.H.O, other national and international organizations and government & non-government policy papers were also reviewed. We used following search terms; Non Communicable Disease, Health system capacity, Pakistan.

**Results:** Several health system issues emerged through the review of the health system capacity for NCDs. These included lack of political commitment, services more focused on communicable disease and MNCH, inadequate human resources, lack of inter-sectoral approach, insufficient funding opportunities and fragmented health system. These issues can be addressed through government support for combating burden of NCDs, provision of services for NCD at PHC level, human resource training regarding NCDs and integrated care system. Finance should be allocated for NCDs and existing HMIS should also be used for utilizing information regarding NCDs.

**Conclusion:** Health systems framework to NCD means in summary re-examining the planning and organization of the entire health system, from service provision to financing, from information generation to ensuring adequate supply of pharmaceuticals/technologies or human resources, from improving facility management to performance monitoring.

**Keywords:** Non-communicable disease; Health system capacity; Pakistan

## Introduction

Pakistan has double burden till 1994 due to communicable and Non-communicable disease have equal contribute burden (38.4% vs 37.7) but afterwards Non-communicable disease exceed the communicable disease (59% vs 41%) [1,2]. various factors were contributed to this shift of burden like rapid urbanization, life style changes are important determinants of NCDs. Many studies show that association between urban living and chronic disease risks increase such as diabetes mellitus, overweight, obesity and hypertension [3]. Pakistan urban population growth rate in 1998 is 3.53% but in 2010 it is estimated more than 5% [4] and Pakistan's urban population is likely to equal its rural population by 2030 [5].

Non-communicable disease are a particular threat to Pakistan, it is estimated that by 2020, two out of three Pakistani deaths will be due to NCDs [6]. Evidence shows that improving health is impossible without inter-sectoral actions addressing the social determinants of health and other contributing factors plus a mix of services targeted at individuals (personal health services) and populations at large (non-personal health services). A health system is defines as "the collection of all public and private organizations, institutions and resources which have mandated to improve, maintain or restore health within the political and institutional framework of the country" [7].

Any health system has some basic goals [3] like improving health levels and equity, protecting people against the catastrophic consequences of disease, improving responsiveness to citizens' expectations and working efficiently. In turn, these results are mediated through intermediate goals such as access, quality, continuity, sustainability, etc.

Health system goals and objectives can be achieved by means of four interdependent functions [2] provision of health services, collection and allocation of the necessary financing, generation of the human resources, inputs that make service provision possible and setting rules as well as providing strategic direction for all stakeholder involved [3-5]. The inter-play and combination of inputs in these functions (service provision, financing, input creation and stewardship) determine the health outcomes in any health care system.

## Rationale

Pakistan has mixed health system, it focus on curative rather than preventive strategy. Most of health system financing directed towards communicable disease such as various vertical programme running in the country. This paper will review health policy, health sector budgeting and health setup in the context of its objectives and capacity to meet the needs of healthcare of this population. It will further provide some strategic direction and reforms which efficiently meet the demand for healthcare in the context of emerging and remerging threats. Keeping the emerging burden of NCD in Pakistan it attempts to review the capacity to manage the growing burden of NCD in Pakistan.

\*Corresponding author: Mubashir Zafar, Dow University of Health Sciences, Karachi, Pakistan, Tel: +92 3332306287; E-mail: [mubashirzafar900@gmail.com](mailto:mubashirzafar900@gmail.com)

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## Objective

To review health system capacities to emerging challenge such as manage burden of non-communicable diseases in Pakistan.

## Methodology

We conducted a systematic search on Pub-Med and Google scholar; reports from W.H.O, other national and international organizations, article, government and non-govt policy paper. We have used search terms such as Non Communicable Disease, Health system, Pakistan. Similarly, we used all documents from 2010 to 2012.

## Health Status of Pakistan

Pakistan has 180 million populations, is currently in the stage of the demographic transition and is undergoing an epidemiological shift in its disease patterns, as evidenced by the double burden of disease [8].

## Communicable Disease

Communicable diseases contribute significantly both to adult and child mortality & morbidity in Pakistan; it estimates that they account for approximately 35% of the total deaths within the country [9]. Most common diseases in children under 5 years of age are acute respiratory infections, which account for 38% of the total consultations and an estimated 1.2 million cases annually [10]. The incidence of acute diarrhea is 5.1 episodes per year per child and one third of early childhood deaths are diarrhea-related [11]. Tuberculosis is responsible for 5.1% of the total national disease burden in Pakistan [12].

A number of public health interventions for the control of communicable diseases are currently being implemented. As a result of these, some improvements have been shown at the intermediate outcome level, particularly with reference to knowledge, behavior and health-seeking attitudes. About 50% of the urban population surveyed recently report using boiled water for drinking, 83% are aware of the benefits of poliomyelitis immunization [13] and 77% are reported to have heard the word AIDS [14]. Progress has also shown at the intermediate outcome level with regard to the implementation of various programmes.

At a process level, the beginning of strategic plans with intervention and evaluation components in various programme areas is positive [14,15]. These include the strategic enhanced programme of HIV/AIDS (2003-08), the strategic plan for implementing the Roll Back Malaria strategy (2005-10), the strategic plan of the national nutrition programme, national plan for the prevention, control of hepatitis and blindness and the accelerated Expanded Programme on Immunization (EPI) efforts. However, sustained efforts with careful attention to impediments to programme implementation are necessary to translate these plans into concerted action.

## Non-communicable Diseases in Pakistan

Pakistan is the 8th most populous nation in the world with nearly 180 million inhabitants [16], NCDs and injuries are amongst the top ten causes of mortality and morbidity in Pakistan; it estimates indicate that they account for approximately 25% of the total deaths within the country [16]. Existing population-based morbidity data on NCDs in Pakistan show that on in three adults over the age of 45 years suffers from high blood pressure [16]. The prevalence of diabetes is reported at 10% whereas 40% men and 12.5% women use tobacco in one form or the other [17]. In addition, it estimates that there are one million severely mentally ill and over 10 million individuals with neurotic mental illnesses within the country [17]. Furthermore, 1.4 million

road traffic crashes were reported in the country in the year 1999. Of these, 7000 resulted in fatalities [17]. Its impact of chronic infectious, neglected diseases on patient's families and society can be severe as this country struggles to join the richer nations of the world. In addition to the obvious effects that morbidity and mortality have, the burden of these diseases to the country's economy is often substantial in terms of loss of productivity, aggravated absenteeism, loss of employment, and health care expenditures. In 2004, deaths due to non-communicable diseases in Pakistan were twice those from communicable diseases. Non-communicable diseases accounted for 40% of all hospital stays and 35% of all outpatient visits in 2004-08 [17].

## Health Systems Configuration

The health care system in Pakistan is mixed vertical and horizontal. Vertical segmentation is reflected in the manner in which separate organizations, such as the Provincial Ministry of Health, private sector healthcare providers, NGOs, armed forces, parastatals and the employees social security institutions [18].

The system is also horizontally aligned in many areas as, for example, in the case of the national programmes and institutions that fall within its jurisdiction. Institutions horizontally integrated with the Ministry of Health include the Pakistan Medical Research Council, the National Institute of Health, the Pakistan Institute of Medical Sciences, the Health Services Academy [18,19]. There are various health system challenges in Pakistan related to NCDs, important challenges described are as followed.

## Service Delivery Ineffective

Pakistan has large networks of health service delivery infrastructure at a primary health care level. Primary health care remain under-utilized, which questions the validity of investments made in them [20]. The primary care level is not well programmed to deliver preventive or treatment services for NCDs. Most of services in these center focus on communicable and maternal and child health but neglected on NCDs. These issues have been compounded by conflicts over sharing of resources and financial arrangements [21].

## Human Resources Issues

The country's focus on producing more doctors has led to marked improvements in the doctor-to-population ratio. But these human resources focus on MNCH and communicable disease and lack of skill to overcome challenge of NCDs [21,22].

## Lack of an Intersectoral Action

It is widely recognized that factors that determine health status have a much broader range than those that are within the area of the health sector [20]. Intersectoral coordination is important to overcome challenges of CD and NCDs and that modern healthcare has less of an impact on population health outcomes than do economic status, education, housing, nutrition, sanitation, population dynamics, human development and improvements at a governance level [22].

## Timely Managing of NCDs

There are several risk factors for NCDs but two basic categories are: modifiable and non-modifiable, former include personnel and environmental factors. Personnel factors include un-healthy diet, physical inactivity, smoking and environmental factors are smokeless free environment [19]. These factors are preventable at primary level health centre but PHC focus on curative rather than preventive measures. Resources allocated to these PHC are consumed mostly on

salaries and running expenses, health education at community level, which are basic components of PHC are lacking [21].

### Mode of Financing

In Pakistan, there are two major types of health system i.e. public and private sector and both have separate system of financing and service delivery [23]. According to estimates public sector provides 23% of the total health expenditures, while 77% comes from out-of-pocket expenditures in the private sector [24].

Health system should have a set of goals to be achieved in a certain period. These goals are health status, financial risk pooling and public satisfaction [25]. Pakistan spends US\$18 per person per year as total health expenditure. While, contribution of public sector in this regard is only US\$4. Most of public budget goes to non-development expenditure including building, equipment's repair, and maintenance; thus, this is not a direct expenditure towards improvement in services or health status, which brings impact over the period. By now development expenditure in health is 40.74% of actual while current expenditure is about 60 percent [26].

The current financing system will allow bottom most of NCD costs for individuals. Out of current expenditure, about 70 percent is spent on salaries [27]. It is also important to note that the health sector has to pay the cost of utilities like electricity and gas on commercial rates, which creates many financial constraints on the health sector. This pressure enhances further due to rise in the cost of these utilities. Such costs bring additional negative impact on health expenditure. This overall picture exerts pressure on health expenditure; leaving little space for flexibility in the existing budget. Most of budget goes to communicable disease programme like HIV/AIDS, Malaria, and Hepatitis [28].

### Disease Burden Disparities

Non-communicable diseases contribute significantly to adult mortality and morbidity and impose a heavy economic burden on individuals, societies and health systems within Pakistan [21]. NCDs are largely unrecognized and manifest itself as a disparity in resource allocations: communicable diseases versus NCDs. These diseases have clearly emerge as major contributors to costs of care in a recently reported population-based cross-sectional survey, which has shown that 37.4% of households spend an average of 405 Pakistani rupees on the treatment of communicable diseases whereas 45.2% of households spends an average of 3935 Pakistani rupees on the treatment of NCDs [29]. These data shows that a significantly higher percentage of households spend more on treatment of NCDs compared with communicable diseases, which serves as a proxy indicator of the double burden of disease [24-27,29]. This calls for a rethinking of the approach to resource allocations.

### Health Policy in Pakistan

Policy is an approved path of action, it forms a legal, political, educational, economic authority. The main focus of health policy, in Pakistan over the years, has been the reinstatement of Primary Healthcare System, as an essential tool to combat core health issues. But despite reforms, it has not been able to deflect from the biomedical model of curative health. The major flaws in the health policy making process have been the highly centralized policy making process and the large gap between theory and practice [28].

The federal ministry of health along with its Planning and Development Unit formulates policies, which are mainly focused on clinical healthcare (communicable and MNCH), focus less attention

to other determinants of health and diseases (NCDs) lying outside the Biomedical model of health [30]. The role of the provincial government is to pass down the policies to the district governments, which implement them. Another problem with the whole process is status quo, which means that continuous focus on previous issue of health and does not pay attention on emerging health issue such as NCDs [31]. Tobacco control policies point in the right direction, but their implementation has largely been stalled.

Evidence suggest [30] that NCDs continue rising trend and surpass the communicable disease but lack or absence of information at the district, provincial, or federal levels and lack of commitment to translate evidence into policy inhibit evidence-based decision making and leave more room for arbitrary and informal policy making that is often tinged with personal preference [30]. Rising cost of health care particularly NCDs and human resources development for the NCDs never triggered a policy dialogue on the worsening situation.

There is need for develop health policy according to need of people and must engage all stakeholder and continue re-evaluate these policy and make necessary changes according to requirement.

### Stewardship

Clear policy and set priorities are required at federal, provincial and district level. Regulation of the private sector is expected for prevention, early diagnosis and screening, service provision for NCDs. Regular health system performance monitoring, evaluation and value added services. Continuous research for generating evidence for action and document experiences and best practices.

### Transform Service Delivery as Radically as Possible

Shift away from disease specific vertical programme to well-structured services and networks. Ensure that the package of primary care services includes NCDs services with a well-functioning referral system. These services are accessible, affordable and acceptable.

### Build NCDs Surveillance System

A comprehensive national NCD surveillance system would inform strategic planning and policy. It would also help better target implementation of the future national NCD policy.

### Universal Coverage

Address the financial barriers that prevent access to health care, especially the high out of pocket expenditure at the point of service for NCDs. Move to prepayment mechanisms (e.g., insurance, etc), coordinate insurance schemes across the country, strengthen tax collection, and develop resource allocation mechanisms that will promote productivity and quality. Ensure effective use of resources allocated for fighting against NCDs.

### Ensure Adequate Resources for Responding to NCDs

NCDs are emerging challenge, so human resources production in line with the service requirements and burden of disease (number and type of human resources -e.g., GPs, specialists, paramedical staff, etc.) and skills required at each level, training relevant to NCDs, systems for continuing education, etc. are essential element for tackling NCDs

### Importance of Inter-sector Collaboration

Authority given to district officer for controlling other sectors such as water and sanitation, environmental agencies, etc for mobilizing them where needed to control challenge of NCDs. Importance of

Inter-sectoral collaboration and their role in overcome challenge of NCDs are the only way for tackle NCDs. Integrate, monitor and adjust intersectoral action.

## Summary

Health systems framework for the control of NCD is necessary in the policy level. It means that reviewing the planning and organization of the entire health system from service provision to financing, from information generation to ensuring adequate supply of human resources, from improving facility management to performance monitoring. A health system perspective would ensure that action against NCD goes with equal focus on burden from communicable diseases, maternal, child health and nutrition issues. Moreover, NCDs affects DALYS, which leads to impact on national economy, therefore actions has to be taken both at the district and provincial level.

## References

- (1998) World Bank. Pakistan towards a Health Sector Strategy. Washington, USA: Health Population and Nutrition Unit, South Asia Region, the World Bank.
- (2011) Health systems policy brief Pakistan: World Health Organization.
- (2000) Health systems -improving performance. Geneva: World Health Organization.
- Bhatti A, Hussain S (2005) Health Facilities (BHUS). *Professional Med J* Dec 12: 357-363.
- United national population, Pakistan situation 2011.
- Hyder AA, Morrow RH (2000) Lost Healthy Life Years in Pakistan in 1990. *Am J Public Health* 90: 1235-1240.
- Duran A, Kutzin J, Martin-Moreno JM, Travis P. In: Understanding health systems: Scope, functions and objectives, in *Health Systems: Health, Wealth, Society and Well-being*. McKee M, Figueras J, editors. Open University Press; 2011. 19-37.
- Nishtar S (2006) The gateway paper. Health systems in Pakistan - the way forward. Islamabad, Heartfile and Pakistan's Health Policy Forum.
- Government of Pakistan. Economic survey 2004. Islamabad, Federal Bureau of Statistics, 2004.
- Government of Pakistan. Estimates from the Weekly morbidity and mortality reports(WMMR) for Pakistan. Islamabad, Federal Bureau of Statistics, 2004.
- Sarfraz M, Iqbal MJ, Azhar IA (2002) Incidence and type of diarrhea in Pakistan. *Pakistan pediatric jour* 26: 101-106.
- World Health Organization Regional Office for the Eastern Mediterranean. Country profiles. Pakistan.
- The Gallup cyber letter. Gallup Pakistan.
- Global Fund to fight AIDS, Tuberculosis and Malaria. (online 15 September 2008) Fact Sheet: The Global Fund's approach to health systems strengthening.
- National Action Plan for control and prevention of NCD and Health promotion in Pakistan. WHO, Ministry of Health Pakistan and Heartfile 2004.
- Health Policy of Pakistan 2001, 2009.
- Nishtar S (2005) Choked pipes: reforming Pakistan's mixed health system. Oxford University Press.
- SPDC. Social Development in Pakistan, Annual Review 2004. SPDC. 2004
- Government of Pakistan. Medium-term development framework 2005-10. Islamabad, Planning Commission, 2005.
- Multiple Indicator Cluster Survey 2003/04. Karachi, Government of Sindh, 2004.
- Nishtar S et al. (2006) Process, rationale, and interventions of Pakistan's National Action Plan on Chronic Diseases. *Preventing chronic disease* 3: A14.
- Nishtar S, Bile KM, Ahmed A, Amjad S, Iqbal A (2005) Integrated population-based surveillance of non-communicable diseases: the Pakistan model. *American journal of preventive medicine* 29: 102-106.
- Government of Pakistan (2003) National plans. Islamabad, Planning Commission, 2005 Government of Pakistan. Poverty reduction strategy paper. Islamabad, Ministry of Finance.
- Mohammad KB, Hafeez A, Nishtar S (2007) Public Sector health financing in Pakistan: A retrospective study *JPM* 57: 311.
- Abbas Q (2008) Human Capital and Economic Growth: Pakistan, 1960-2003 Qaisar Abbas, James Foreman-Peck. *Lahore Journal of Economics* 13: 1-27.
- Planning Commission of Pakistan
- Ministry of Health & Ministry of planning and development, GoP in collaboration with WHO. Inventory of health and population investment. 2005.
- Khan A (1996) Policy Making in Pakistan's Population Program. *Health Policy and Planning* 11: 30-51.
- Khan MM, Van Dijk JP and Van den Heuvel (2005) The Impact of Economic and Socio-cultural Context upon Health Policy Outcome in Pakistan. *Eastern Mediterranean Health Journal* 2: 50-62.
- Zaidi Akbar. Poverty-Health Relationship in Pakistan. Page 12; Pakistan Poverty Assessment update. Poverty Group Country Policy Operation Unit Asian Development Bank.
- (2005) National Health Management Information Systems/IDSP Cell (Government of Pakistan). National Strategic Framework for Disease Surveillance: Ten Year's Vision, Five Year's Plan. Islamabad: The Ministry.

**Citation:** Zafar M, Malik A (2014) Emerging Challenges and Health System Capacity: The Case of Non-Communicable Diseases in Pakistan; a Review. *J Infect Dis Ther* 2: 127. doi:[10.4172/2332-0877.1000127](https://doi.org/10.4172/2332-0877.1000127)

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