

Invited paper

Heartfile's contribution to health systems strengthening in Pakistan

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ABSTRACT Key health indicators in Pakistan remain relatively intransigent. While there has been some improvement at intermediate outcome and process levels, several challenges remain, including an inattention to health systems strengthening. Within this context the NGO Heartfile has worked to bring about changes at a health policy and systems level through creation of a policy-level institutional mechanism for systems strengthening and a national health reform agenda based on systems strengthening and an intersectoral approach to health. By generating evidence, Heartfile has also assisted in strengthening the evidence–policy linkage, and in developing contemporary concepts for health policy and planning and service delivery.

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Introduction

The health status of Pakistan's population illustrates that the existence of many health systems, several preventive and promotive interventions and one of the largest service delivery infrastructures in the world have been unable to contribute significantly to improving health outcomes [1]. However, notwithstanding the relative intransigency of key health indicators, some impact at the intermediate outcome stage has been observed and can be attributed to inputs at several levels. This article provides a snapshot of Pakistan's health indicators, the orientation of its health systems and the perceived impediments to achieving stipulated health sector targets and goals. Within this context, the article provides a perspective on the contribution made by the nongovernmental organization (NGO) Heartfile [2], to bring about changes at a health policy and systems level.

Health status in Pakistan: a snapshot

With a population of 160 million, Pakistan is currently in the second stage of the demographic transition and is undergoing an epidemiological shift in its disease patterns, as evidenced by the double burden of disease [3]. There are several key health indicators for Pakistan.

Infectious diseases

Infectious diseases contribute significantly both to adult and child mortality and morbidity in Pakistan; estimates indicate that they account for approximately 35% of the total deaths within the country [4]. Most consultations in children under 5 years of age are for acute respiratory infections, which account for 38% of the total consultations and an estimated 1.2 million

cases annually [4]. The incidence of acute diarrhoea is 5.1 episodes per year per child and one third of early childhood deaths are diarrhoea-related [5]. As regards malaria, the current annual parasite incidence has been reported at 0.682 per 1000 population; however the denominator for this is only the 25% of the population that accesses government facilities, and according to conservative estimates approximately half a million cases of malaria occur in the country annually [6]. For tuberculosis, Pakistan ranks 6th among the 22 high-burden countries in the world and harbours 43% of total cases in the Eastern Mediterranean Region of the World Health Organization (WHO) [1]. Tuberculosis is responsible for 5.1% of the total national disease burden in Pakistan [7]. However, the actual burden is envisaged to be much higher, given that more than 50% of outpatient contacts in the private sector are not reported in these figures. With hepatitis B and C, a high seroprevalence of 2% and 1.8% respectively has led to the coining of the term "a cirrhotic state" to describe the high prevalence of these diseases in Pakistan [8]. With regard to HIV/AIDS, until 2004 the HIV epidemic in Pakistan was considered at a "low level". However, recent data show a high prevalence among some vulnerable groups; for example, HIV infection among intravenous drug users in Karachi has been reported at 23%. This shifts the entire epidemic scenario of the country to a higher stage: to a "concentrated level" [9].

Given the burden of infectious diseases, a number of public health interventions are currently being implemented. As a result of these, some improvements have been shown at the intermediate outcome level, particularly with reference to knowledge, behaviour 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 [10], and 77% are reported to have heard the word AIDS [11]. Progress has also been shown at the intermediate outcome level with regard to the implementation of various programmes. For example, the tuberculosis programme has reported implementation of the DOTS (directly observed treatment short-course) strategy in all 120 districts of the country, an increase in the smear-positive case detection rate from a baseline of 7% in 2001 to 54% in 2005 and a treatment success rate of 79% in the cohort of 2001 [7].

At a process level, the emergence of strategic plans—with intervention and evaluation components—in various programme areas is encouraging. 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, the national plans for the prevention and 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.

With regard to infectious diseases control, a number of challenges still remain to be addressed. In terms of rare infectious diseases, there has been a resurgence of leishmaniasis in Pakistan after the influx of Afghan refugees and the recent earthquake on 8 October 2005; a 2.7% prevalence of anthroponotic cutaneous leishmaniasis lesions and a 4.2% prevalence of scars have been reported in the last 3 years [12]. However, despite its endemicity, there are no federal or provincial programmes for the control of leishmaniasis. Pakistan also continues to face the challenge of episodic viral haemorrhagic fevers as there are no

concerted response mechanisms against this [13]. At the same time, diseases such as leprosy, which were declared controlled a decade ago, still need to be under surveillance given the long incubation period.

Maternal and child health

The current under-5 mortality rate, infant mortality rate and maternal mortality rate stand at 100 per 1000 live births, 73 per 1000 live births and 400 per 100 000 women of child-bearing age respectively [14]. Whereas there has been a steady, albeit slow, improvement in child survival, much of the improvement relates to older infants and the neonatal mortality rate has remained relatively resistant to change in the last few decades [15]. The maternal and child health challenge can be further highlighted by taking a snapshot of the nutritional status of Pakistan's children. Twelve per cent (12%) of children under 5 years of age are severely underweight and 38% are moderately to severely underweight. Significant rural and urban disparities have also been shown in child health status; infant mortality rates of 71, 104, 77 and 79 per 1000 live births has been reported for Sindh, Balochistan, Punjab and North-West Frontier Province (NWFP) respectively [16,17].

As regards maternal mortality, each year at least 25 000 women die due to complications of pregnancy or childbirth [1]. Ironically, 70%–80% of all maternal deaths are due to direct obstetric causes such as haemorrhage, infection, eclampsia and obstructed labour, all of which can be prevented. Moreover, a recently conducted national study estimates the national abortion rate at 29 per 1000 women of reproductive age, implying that a sizeable proportion of Pakistani women have abortions [18].

However in contrast to these trends, improvements at an intermediate outcome

level have been shown. An evaluation of the National Programme for Family Planning and Primary Health Care conducted in 2002 showed that the lady health worker services were having a positive impact on the health status of the poor [19,20]. The proportion of women (15–49 years of age) who gave birth during the last 3 years and had made at least 1 antenatal consultation has recently been reported at 50% as opposed to earlier estimates for 1999–2000, which stood at 18% [21], and the proportion of births attended by skilled birth attendants has also shown progress, increasing from 18% in 1999–2000 to 31% in 2003 [22]. Contraceptive prevalence has also improved in the last 5 years from 17% in 1999–2000 to 36% in 2003 [23].

Furthermore, improvement has also been observed at the process level. The National Maternal, Neonatal and Child Health Programme 2005–10 envisages improved access to maternal and child health services and it is also expected that strengthening of EPI and maternal and child health interventions as part of the lady health worker programme and the Women's Health Project and the incorporation of several health-related projects into the workplan of the National Commission for Human Development will also help in improving maternal and child health outcomes [24].

Noncommunicable diseases, injuries and mental health

Noncommunicable diseases and injuries are amongst the top 10 causes of mortality and morbidity in Pakistan and account for 25% of the total deaths within the country [25,26]. One in 3 adults over the age of 45 years suffers from high blood pressure [27]; the prevalence of diabetes is reported at 10%, and 40% of men and 12.5% of women use tobacco in one form or another [28,29]. Karachi reports one of the highest

incidences of breast cancer for any Asian population [30]. In addition, estimates indicate that approximately 1 million people suffer from severe mental illness and over 10 million individuals from neurotic conditions [31]. There are more than 1.5 million blind people in the country [1]. Furthermore, 1.4 million road traffic crashes were reported in the country in 1999, 7000 of which resulted in fatalities [32]. In view of these data, 2 programmes have been launched in the last 3 years; the National Action Plan for the Prevention and Control of Noncommunicable Diseases in Pakistan and the National Blindness Prevention Programme. The former is an integrated programme on noncommunicable disease (NCD) prevention and control which views NCDs within an expanded definition which, in addition to diseases linked by common risk factors, also includes mental health and injuries. This programme has established a surveillance system through which it has established baseline risk parameters against which the impacts of intervention can be gauged in time.

Health systems configuration

The health care system in Pakistan is partially vertical and in part, horizontal. Vertical segmentation is reflected in the manner in which separate organizations, such as the Federal Ministry of Health, the provincial health departments, private sector healthcare providers, NGOs, armed forces, parastatals and the employees' social security institutions, raise and allocate their own funds, pay their own providers and deliver services. In certain cases, these are truly vertical as they serve non-overlapping populations as in the case of the armed forces, Fauji Foundation, parastatals and social security institutions. However, a cer-

tain degree of overlap occurs in relation to the manner in which the Ministry of Health and the provincial health departments provide services versus the private sector. The system is also horizontally aligned in many areas as, for example, in the case of the Federal Ministry of Health and the national programmes and institutions that fall within its jurisdiction. The national programmes are discussed later. 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, the National Institute for the Handicapped, Jinnah Postgraduate Medical Centre, the National Institute of Cardiovascular Diseases and the National Institute of Child Health

Health is generally considered a provincial matter in Pakistan. The role of the federal government (Ministry of Health) involves policy-making, coordination, technical support, research, training and seeking of foreign assistance. The provincial and district departments of health are responsible for the delivery and management of health services with a recently enhanced role of the latter in view of administrative devolution [33]. Provinces can also legislate in many areas under the Concurrent Legislative List [34]. In theory, stewardship tasks in the health sector are entrusted to the Ministry of Health at the federal level and the departments of health at the provincial level. These are mandated to guide and regulate other organizations that are horizontally integrated with them and other vertically aligned health systems.

The State attempts to provide health care through a provincial and district level 3-tiered health care delivery system and a range of federally-led public health interventions with implementation arms at the provincial and district levels. The provincial

level system includes basic health units and rural health centres, which form the core of the primary health care model, secondary care which includes first and second referral facilities providing acute, ambulatory and inpatient care through Tehsil headquarter hospitals and district headquarter hospitals, and tertiary care which comprises teaching hospitals. Notwithstanding these facilities, most people receive health care through private out-of-pocket payments made directly to the providers at the point of care. Taxation and out-of-pocket payments are, therefore, the major modes of financing health within the country; donor contributions add to these. Less than 3.5% of employees are covered under the employees' social security scheme and although there are limited social protection funds such as *zakat* and *bait-ul-mal*, which serve approximately 3.4% of the population in need of care, a comprehensive social protection mechanism does not exist. Limited attempts have been made to bring into the mainstream philanthropic grants and private resources as modes of financing health.

In recent years, many alternative service delivery and financing models have been introduced at various levels, with varying levels of success, and several new health initiatives have also been launched. These include the Government of Punjab's Health Reform Unit, NWFP's WISHpad, legislation to make hospitals autonomous, the recent introduction of a national strategy to overhaul the primary health care system, pilot schemes to contract out basic health services in Punjab, the National Commission for Career Structures of Health Care Providers, the continuing medical education initiative of the College of Physicians and Surgeons, institutional mechanisms such as the National Health Policy Unit; World Bank-led greater impetus to institutionalizing public health surveillance, the multi-

donor-supported social protection strategy, recent investments in public health such as in the case of hepatitis and blindness and the most recent launching of social protection in NWFP.

Pakistan's health sector goals—those that are drawn on the Poverty Reduction Strategy Paper, the Millennium Development Goals (MDG) and others that are part of the Medium-Term Development Framework 2005–10 [35]—focus on achieving specific programme-related targets and a number of programmes have been structured to achieve these targets. Broadening the base of the programmes to hepatitis, NCDs and blindness reflects the expansion of the focus to what can be termed a “local MDG+ agenda”. However, despite the existence of a number of health systems and new initiatives, critical challenges still remain to be addressed.

Challenges for the health systems

An overview of the health systems provides evidence of both efforts attempted as well as impediments. Programmes aimed at promoting health have been viewed as a developmental need and have, therefore, drawn policy and financial support from national plans for development with increasing allocations in recent years [36,37]. However, gaps in the implementation of policies and lack of an intersectoral approach to health have prevented this objective from fully translating into desired outcomes. The challenges facing the health systems fall under the following different areas.

Area 1: disease burden disparities

Noncommunicable diseases contribute significantly to adult mortality and morbidity and impose a heavy economic burden on

individuals, societies and health systems within Pakistan [38]. However, this remains largely unrecognized and manifests 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 spend an average of 3935 Pakistani rupees on the treatment of NCDs. These data show 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 [39]. This calls for a rethinking of the approach to resource allocations.

Area 2: lack of attention to health systems

Decades of focus on programme-based service delivery and emphasis on infrastructure have led to an inadvertent neglect at the health systems level; ironically, all these lines of service delivery require systems-level solutions. Gaps in meeting programme goals and objectives can, therefore, only be bridged at the health systems level.

Financing issues

Although spending has been increased recently, issues of fund utilization still prevail and alternate mechanisms of financing health—some of which have the potential to make financing patterns more equitable and efficient—have not been mainstreamed into the delivery of care. Furthermore, disparities in spending patterns have been noted with regard to preventative versus curative allocations, in clear violation of stated policies [1]. Consecutive 5-year plans

show that clinical services have consistently consumed more than 45% of the total health budget [40].

Service delivery challenges

Pakistan has one of the largest public-sector owned service delivery infrastructures in the world at a primary health care level. However, these remain under-utilized, which questions the validity of investments made in them. Furthermore, public health interventions also suffer from implementation challenges, largely owing to issues at a governance level.

Financing and service delivery challenges have also manifested themselves as rural–urban disparities. Seventy per cent (70%) of Pakistan’s population lives in rural areas; however, health indicators in the rural areas are considerably worse compared with urban areas. Recent surveys have also reported significant rural–urban disparities in child health status. The under-5 mortality rate in rural areas of the province is 117 per 1000 live births compared to 68 per 1000 live births in the urban areas whereas the under-5 mortality rate in the city of Karachi has been reported at 55 per 1000 live births [41]. Stark disparities have also been reported between the rural (45%) and urban (30%) prevalence of malnourished children in various parts of the country [41].

Federal–provincial–district level systems interface

Over the years, overlapping services have created ambiguities between federal and provincial roles and responsibilities and administrative authority. These issues have been compounded by conflicts over sharing of resources and financial arrangements, a problem that has been complicated further after the passage of the Local Government Act of 2002.

Governance and implementation

Policies and legislative and regulatory frameworks remain poorly implemented due to generic issues inherent in the implementation of laws. Administrative bottlenecks, decision-making delays and onerous financial and administrative procedures are known to undermine programme implementation.

Human resources

The country’s focus on producing more doctors has led to marked improvements in the doctor-to-population ratio. Conversely, challenges relating to quality and capacity and the effective and equitable deployment of health-related human resource still loom large. These issues are further exacerbated by poor regulation of the private sector.

Area 3: untapped public–private interface

More than 50% of care is provided by the private sector, and out-of-pocket payments are known to be the major contributor to financing health care within the country [1]. The role of the private sector becomes all the more important in view of the need for alternative service delivery arrangements to make government-owned health facilities viable and sustainable. Mainstreaming the role of the private sector would also necessitate careful attention to a number of other regulatory considerations relating to institutional arrangements, performance assessment, accreditation of doctors, continuing medical education, licensing and accreditation of service delivery facilities and quality assurance mechanisms.

Area 4: lack of an intersectoral approach to health

It is widely recognized that factors that determine health status have a much broader

range than those that are within the realm of the health sector and that modern health care 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. In contrast to this, health is viewed in a health care system rather than a health systems context.

Area 5: evidence and its use

Paucity of locally-applicable evidence pertinent to many aspects of decision-making, issues regarding the use of existing evidence, and the lack of commitment to take appropriate policy decisions based on evidence all act as impediments to the use of evidence. This is compounded by limited rational accountability of the decision-making process. Evidence generally points to the need for long-term remedial measures; however, a combination of factors—such as lack of institutional maturity, career structures that foster short-sightedness and orientation around short-term outputs—prevent evidence-based enduring actions from taking root

Area 6: limited attempts to innovate

The public sector model in health care delivery does not provide the flexibility to innovate.

The way forward to bridge these gaps

The above-mentioned issues, together with several other questions, are contributing to the current intransigency of key health indicators within the country. However, as bad as these may appear, there is still room for hope if appropriate health reforms are instituted in time. This may also be an op-

portune time for health reforms. Pakistan is experiencing economic growth and has additional fiscal space. This, coupled with the introduction of several parallel reforms related to devolution and privatization and the injection of new resources, makes health reform a viable proposition.

Viable public policy cannot be viewed or treated in isolation from political, technical or administrative processes that define what and how care is delivered. Traditionally, a policy cycle links these processes—coordination, consensus-building, decision-making, policy development, policy implementation, evaluation and identification of issues. Analysis and interpretation again loop into consensus-building, thus completing the policy cycle. However, a review of the policies themselves and the health systems process has shown gaps at various levels.

An NGO's contribution to bridging these gaps

The NGO Heartfile was established in 1998, with an initial focus on cardiovascular diseases prevention and control through public awareness, advocacy and research [42–46]. In 2003 Heartfile lent impetus to, and led the creation of, a tripartite partnership on NCDs within Pakistan at the national level which was aimed at developing and implementing a national strategy for NCD prevention and control. This partnership includes Heartfile, the Ministry of Health and the WHO Pakistan Office. It was during the implementation of this programme that the NGO felt the need for a broader effort for systems strengthening given that the impediments to programme implementation were embedded in systems issues. This realization culminated in the creation of Pakistan's Health Policy Forum, which has the distinction of

being the country's first health sector think tank and the first instance of a civil society-led effort, which is in the process of creating a new health policy within the country [47]. The organization has also played a major role at the international level over the past decade by participating in global advocacy efforts to mainstream cardiovascular diseases and NCDs in global development and health planning, and has developed innovations for this purpose at the health sector level [48].

Over the past 7 years, Heartfile has made contributions to strengthen Pakistan's health systems, which are outlined below in the context of the challenges described earlier.

Area 1: broadening the scope of public health and honing the focus on the double burden of disease

Public health has had a traditional focus on infectious diseases and maternal and child health in Pakistan. Up until 2003, there was no programme and consequently no dedicated institutional responsibility for the prevention and control of NCDs and for allied health promotion measures. In 2003, Heartfile contributed to the creation of a tripartite partnership with the overall objective of developing and implementing the National Action Plan for Noncommunicable Disease Prevention, Control and Health Promotion in Pakistan (NAP-NCD) [49]. This was the first concerted, integrated, partnership-based approach for the prevention and control of NCDs from within a developing country. Through this initiative, another programme was added to Pakistan's public health interventions. The terms of the agreement stipulated in an official Memorandum of Understanding and programme parameters placed Heartfile in a leading role both in developing and subsequently implementing NAP-NCD [50–52].

The integrated approach to NCDs established through this programme is anticipated to contribute to health systems strengthening in many ways. By integrating diseases for combined actions, integrating actions with existing programmes within the health system and harmonizing interventions, the strategy is envisaged to obviate issues that can lead to fragmentation of the health system by imposing independent vertical lines of intervention. In addition, Heartfile envisages institutionalizing implementation arrangements within the Ministry of Health over the medium term. In line with this approach is the transfer of many implementation responsibilities to counterpart arrangements in the Ministry of Health thereby strengthening existing systems. In the long term, Heartfile sees itself in a technical support role in this partnership arrangement.

Although this programme has encountered implementation challenges, work is currently under way to execute its first phase, which involves establishing an integrated NCD surveillance system, launching a behavioural change communication strategy through the media and Pakistan's field force of lady health workers, and tabling key legislative actions in support of broad-based population strategies for NCD prevention and control [53].

Area 2: attention to health systems strengthening

Creating a policy level institutional mechanism

Heartfile lent impetus to the creation of Pakistan's Health Policy Forum [47], which is the country's first health-sector think tank. The Pakistan Health Policy Forum contributes to health systems strengthening by advocating for a new health policy, taking the lead in its development, playing a technical support role, performing advocacy

and watchdog functions, mainstreaming the voice of civil society and the people in the health policy process and synchronizing stakeholder efforts for improving health outcomes.

Spearheading a national health reform agenda

Within 6 months of its official debut in August 2005, Pakistan Health Policy Forum released its first publication [1]. Entitled *The gateway paper. Health systems in Pakistan: a way forward*, this publication is intended to be a new effort within the country to address the pressing health needs of the country. The intent is to articulate the reasons for health systems reforms within the country, propose a direction for reforms and emphasize the need for an evidence-based approach to reforms. The paper makes a strong case for systems reforms. Linkages have been proposed to help Pakistan's health systems and its policy cycle work better together. The paper reviews issues and proposes solutions for the basic functions of health systems, namely stewardship, financing, service provision and inputs. It also discusses 3 distinct interface areas critical to performing these functions and focuses on several overarching health paradigms. The paper forms the basis of the creation of a new health policy, which is currently in the making.

Area 3: creation of a new health policy

Based on the gateway paper approach to health systems, a new health policy is currently in the making in Pakistan—a process that is guided by country-wide rounds of post-gateway paper policy roundtables. This is a distinctly novel occurrence, not only because this is the first time a civil society-led effort is spearheading the creation of a “policy” but also because it is based

on an approach that is also civil society-led. The new policy has implications for systems strengthening since it will be focused on systems, rather than programme goals and will factor societal or social measures into the planning process. It will attempt to bridge the gaps in health policy and planning which have been described earlier.

Area 4: fostering an inter-sectoral approach to health

The gateway paper approach to health systems underscores the need for: (1) developing alternative policy approaches to health within its intersectoral scope with careful attention to the social determinants of health and contemporary considerations that influence health status; (2) redefining targets within the health sector in order to garner support from across various sectors; and (3) setting these targets within an explicit policy framework in order to foster intersectoral action. This approach will also involve creating intersectoral agencies and mechanisms that facilitate their concerted actions.

Area 5: strengthening the evidence-policy linkage

Heartfile has contributed to strengthening the evidence and policy linkage within the country by developing a sustainable mechanism for evidence generation by producing evidence for policy and by fostering the linkage of evidence with policy. The first two are in the area of NCDs whereas the third is related to health policy and systems in a broader context. With respect to the first two and as part of the first phase of NAP-NCD, Heartfile has developed an integrated population-based surveillance system for NCDs. This model incorporates modules for surveillance of injury and mental health, and the expansion of this module to incorporate elements relevant to programme

evaluation enables it to serve both as a risk factor surveillance tool as well as a programme evaluation instrument. By setting up the surveillance system, a contribution has been made to strengthen sustainable disease surveillance methodologies given that the previous surveillance activities focused on infectious disease surveillance only [55]. A strong case has also been made for institutionalizing public health surveillance in the health reform agenda as set forth in the gateway paper [1].

Heartfile has also made contributions to generating evidence in the policy domain by conducting the first case-control study to determine causal associations for cardiovascular diseases. This has assisted in setting targets for preventive interventions [44]. In the health system domain, evidence forms policy and systems form the basis of the health reforms proposed in the gateway paper. Heartfile has also been conducting pilot and demonstration studies to assess the feasibility and appropriateness of introducing chronic disease as a supplementary education module in the districts, into the work plan of grass-roots level health-care providers and as an additional continuing medical education component for all categories of health-care provider in disadvantaged settings. The empirical evidence yielded through this programme forms the basis of the NAP-NCD programme.

Area 6: fostering contemporary concepts

Heartfile has generated and or used several contemporary concepts in health-sector planning, programme implementation and evaluation over the past decade. These have contributed to health system strengthening through their application in low-resource settings and through the generation of evidence, which was then used in many instances and in larger projects. These are

particularly important in the area of health education, which involves the use of social marketing, resource mobilization, development of tools such as the integrated framework for action, which has enabled the monitoring of complex processes and the contribution from many sources to impact nationally agreed targets in the NAP-NCD programme. Other innovations involve the array of partnerships Heartfile has developed and the manner in which it has influenced them towards improving health outcomes. These partnerships include those with the largest publication house, state television, pharmaceutical agencies and consumer distribution agencies and national public health programmes. These have contributed to the understanding of partnership dynamics and relationships, and joint governance and operating arrangements for improving health outcomes (Table 1).

Within this context Heartfile has made contributions to bring about changes at the level of health policy and the systems level, particularly with reference to (1) broadening the scope of public health and honing the focus on the double burden of disease, (2) creating a policy level institutional mechanism for systems strengthening and (3) spearheading a national health reform agenda based on health systems strengthening and an intersectoral approach to health. In addition, by setting an example and generating evidence, Heartfile has also assisted in strengthening the evidence-policy linkage, developing several contemporary concepts at a health policy and planning level and service delivery.

Conclusion

NGOs traditionally suffer from several limitations such as resource constraints, weak institutional bases and issues with sustain-

Table 1 Heartfile's areas of work, programmes and partners

Area	Programme	Partners
Behavioural change communication campaigns	Print media interventions: The News Heartfile Campaign Jang Heartfile Campaign US Heartfile Campaign Heartfile public awareness leaflets [42] Electronic media interventions: <i>Lambi Zindigi Kay Raz</i> (Learn to Live Longer Campaign) [55]	<ul style="list-style-type: none"> • Jang group of newspapers • UDL Distributors
Broadening the scope of public health	NAP-NCD media interventions Integration of noncommunicable diseases in the workplan of lady health workers [37] The National Action Plan for Prevention and Control of Noncommunicable Diseases and Health Promotion in Pakistan (NAP-NCD) [49,50]	<ul style="list-style-type: none"> • Pakistan Television • Serendip Productions • Mobilink (Pakistan Telecommunications Limited) • Advertising agencies • Government of Pakistan's National Programme for Family Planning and Primary Health Care • Ministry of Health • World Health Organization • The National NCD Forum
Health systems strengthening	Pakistan's Health Policy Think Tank/Forum	<ul style="list-style-type: none"> • Currently more than 72 partners in this coalition including government agencies, NGOs, private medical academic and service delivery organizations, allied health organizations, development partners, professional associations [48]
Research	<i>Epidemiological research</i> [44] 1. RISKORN Study 2. INTERHEART Study 3. INTERSPIRE Study Health policy and systems research <i>Operational research</i> [56] 1. PREMISE Study 2. Validation study for the WHO Risk Management Package 3. Global [price of chronic disease medicines] WHO Drug Survey	<ul style="list-style-type: none"> • St Thomas' Hospital, London • McMaster University, Canada • Imperial College, London • WHO Regional Office for the Eastern Mediterranean • WHO Cardiovascular Disease Unit, World Health Organization, Geneva

Table 1 Heartfile's areas of work, programmes and partners (*concluded*)

Area	Programme	Partners
Research	<p><i>Surveillance</i></p> <p>1. Establishing an integrated NCD surveillance system in Pakistan for chronic diseases [53]</p> <p>2. Strengthening sustainable public health surveillance in Pakistan [57]</p> <p><i>Demonstration projects</i></p> <p>Heartfile–Lodhran Cardiovascular Disease Prevention Project</p> <p>Heartfile JC Project [45]</p>	<ul style="list-style-type: none"> • World Health Organization STEPs surveillance • Centers for Disease Control and Prevention, Atlanta • World Bank • Ministry of Health • National Rural Support Programme (NRSP) • District Department of Health and Education in the Districts of Lodhran, Jhelum and Chakwal • National Programme for Family Planning and Primary Health Care (NPFPPHC) • Department for International Development, UK • European Union

ability. As an NGO, Heartfile is no different and has struggled for its survival. Notwithstanding, its contributions—especially at a process level—to strengthen health systems in Pakistan have been noticeable. During its transition from modest beginnings to its present leading role in chronic disease prevention and control and health policy, systems and planning, its efforts have hinged on intellectual independence, the ingenuity of its indigenous responses to health issues and innovative approaches to promoting health. Its scope of work initially focused on research, advocacy, technical support and health communication. Now, it is also involved in service delivery in the area of chronic disease and it plays a crosscutting role in the overarching policy,

regulatory, structural, management and fiscal parameters within the health sector and beyond. More recently, through its think tank function and by bringing many critical social sector issues to the forefront, Heartfile is now setting its sights on bold objectives. Viewing health in a broader national and international policy context, Heartfile strives to exist as a responsible civil society organization deeply conscious of and committed to playing its role in contributing to improving the lives of millions within the country. This it aims to achieve by providing and supporting solutions both within and beyond the health sector through its own work and through its work in partnerships with others.

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