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ORIGINAL ARTICLE

Health system challenges of NCDs in Tunisia

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Abstract
Objectives The objective of this study was to present a qualitative 'situation analysis' of the healthcare system in Tunisia, as it applies to management of cardiovascular disease (CVD) and diabetes. A primary concern was the institutional capacity to manage non-communicable diseases (NCDs).
Methods Research took place during 2010 (analysis of official documents, semi-structured interviews with key informants, and case studies in four clinics). Walt and Gilson's framework (1994) for policy analysis was used: content, actors, context, and process.
Results Problems of integration and coordination have compounded funding pressures. Despite its importance in Tunisian healthcare, primary health is ill-equipped to manage NCDs. With limited funds, and no referral or health information system, staff morale in the public sector was low. Private healthcare has been the main development filling the void.
Conclusion This study highlights major gaps in the implementation of a comprehensive approach to NCDs, which is an urgent task across the region. In strategic planning, research on the health system is vital; but the capacity within Ministries of Health to use research has first to be built, with a commitment to grounding policy change in evidence.

Keywords Tunisia · Arab health · Health system challenges · Non-communicable disease · Health · Policy

Introduction

Tunisia is a Northern African country, located between Algeria and Libya, with a population of about ten million. In many respects, it is typical amongst emerging South and East Mediterranean countries undergoing rapid demographic and epidemiological change (Ben Romdhane et al. 2002, 2005). A review of the epidemiological profile shows that non-communicable diseases (NCD), such as cardiovascular diseases (CVD), cancer, and diabetes, now exceed communicable and traditional infectious diseases as the main causes of morbidity (70.8 % of cases) and mortality (79.7 % of deaths), and there is a growing literature on the burden of NCDs and their risk factors (Ben Mansour et al. 2012; Bouguerra et al. 2007; Elasmi et al. 2009; Ben Romdhane et al. 2012; Saidi et al. 2013). Across the Middle East and North Africa (MENA) region, economic development has intensified the trend towards urbanization, and brought improved health care, education, drinking water and sanitation. But these same developments have been accompanied by changes in economic activity, family structure, lifestyle and nutrition which have fostered the growing epidemic of NCDs (TAHINA 2006, Atek et al. 2013).

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Yet within its region, Tunisia also exhibits a number of distinctive characteristics. The improvement in life expectancy at birth (a gain of 22.25 years over the last four decades) is one of the highest life expectancies in the MENA Region (World Health Organization 2005). Maternal and infant mortality have, for example, shown marked improvements (Arfa and Achouri 2008; Ben Romdhane and Grenier, 2009). Education and healthcare have received more investment and proved more effective than in most MENA countries, underpinning this gain in life expectancy (World Health Organization 2013), and Tunisia features among the MENA countries with the largest development gains since 1970 (Batniji et al. 2014). Basic social protection, moreover, covered a much larger proportion of the population than was typical of the region (Ben Romdhane 2006; Saleh et al. 2014), and gender inequalities were arguably less pronounced. In relation to NCDs, these achievements translated into a broadly based awareness at the center of the health system of the challenge posed by this epidemiological transition.

Despite these achievements, analysis of the Tunisian situation relies heavily on routine socio-demographic indicators, and original research on the health system and health policy environment, and in particular on the emergent NCD burden, is in its infancy. This paper starts to fill that gap. Its objectives are to assess (1) national policies for managing CVD and diabetes, and (2) the organizational preparedness and overall capacity for managing these two diseases within Tunisia's health system. Unusually in the region, this took the form of a qualitative analysis. Our primary focus was on the key concerns of stake-holders about the institutional capacity to manage the surge in CVD and diabetes. This research formed part of the larger comparative study (MedCHAMPS) featured in this supplement, taking place also in Palestine, Syria and Turkey. This article builds on a comparative examination of healthcare systems in these four countries by Phillimore et al. (2013), and provides a more detailed analysis of the Tunisian situation. Data collection took place in 2010, immediately prior to the revolution and political transformation which started in Tunisia at the beginning of 2011. This has crucial implications for this study, and we return to it in "Discussion".

Methods

This qualitative 'situation analysis' entailed three 'levels' of data collection: first, an analysis of official documents, which provided details of organizational structures and planning frameworks; second, semi-structured interviews were conducted with key informants, defined as those with major responsibilities for the health system as a whole, and for CVD and diabetes within it; and third, case studies based on brief fieldwork undertaken in four clinics in each country, to provide insight into local practice and circumstance in urban and rural settings, to gauge likely gaps between theory and practice. Eight documents were reviewed in this study, concerned with hypertension, diabetes, obesity, and tobacco programs, cardiovascular strategy, and prevention. Twelve key informants were interviewed, selected to represent distinct perspectives on the health system: three Health Directors at national level and two at regional level; one national and two regional NCD coordinators; two public health researchers; and two representatives of NGOs involved in NCD control. Further interviews took place with local practitioners (doctors and nurses) during fieldwork in selected clinics. This three-level design enables us to address the question of what gets lost in translation between the ministry or international bodies and the local clinic where healthcare is provided. This article draws primarily, however, on the first two levels.

Interview schedules were designed by adapting those developed by Unwin et al. (1999), and translating into French (key informants) and Arabic (most clinic-based interviews). Subsequent analysis was assisted using Atlas.ti, to identify key themes (see Phillimore et al. 2013 for further details). Qualitative research is unusual in health research in Tunisia and the region. One challenge was the limited pool of researchers trained in qualitative methods of analysis in the medical field in Tunisia. Considerable effort, therefore, went into the training and explanation of the rationale behind the choice of methods. Formal approval for this research (as part of MedCHAMPS) was sought and received from the ethical committee of Institut Pasteur, Tunis.

Results

Following Phillimore et al. (2013), this article adapts a well-known framework for health policy analysis (Walt and Gilson 1994) to present its findings. Walt and Gilson model the interplay between four elements of the health policy process—content, actors, context and process. Although this article addresses aspects of the health system and its organization, rather than the health policy process per se, the framework they suggest has wide currency and assists us in understanding the dynamics of the Tunisian case. In our version of this model, the first three (content, actors, context) interact to generate and inform the dynamics of the system (process) (Fig. 1 illustrates the model, Table 1 presents a summary of findings at the end of this section).

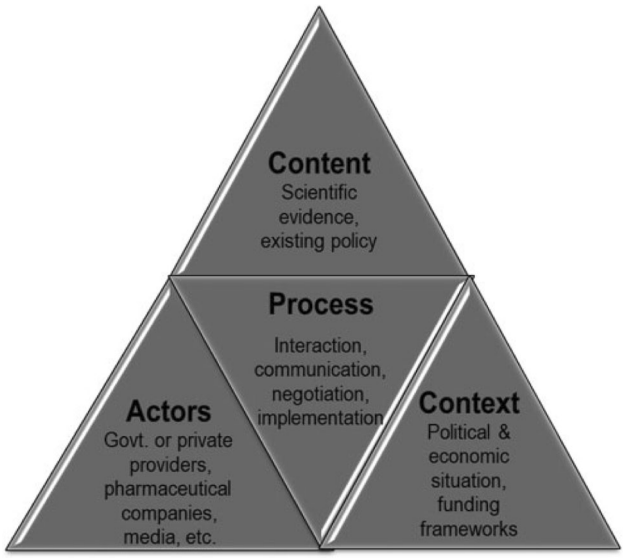

Fig. 1 Health policy interactions

Table 1 Summary of results in Tunisia

Content	NCD burden recognized at central level for several years
	Recognition less evident at district level and in rural/interior areas
	Unit in MoH coordinates national programs for hypertension and DM
	Recognized gaps in implementation of these programs
	Smoking ban 2010
Actors	MoH with key planning and delivery responsibility
	Growing private sector provision in main cities, including small hospitals
	In theory regulated by MoH; in practice autonomous
	Growing national pharmaceutical industry
	Limited NGO presence
Context	Tax-funded health system with high (c80 %) social insurance coverage
	1990s reforms strengthened social protection
	But increasing out-of-pocket costs in public provision
	Regional and wider social inequalities accentuating health inequalities
Process	Coordination deteriorating with growth of private sector a parallel health economy
	Fragmentation and duplication in cities arises from competing interests
	Strategic partnerships for NCDs not being created; no multi-sectoral action
	Regional inequalities growing

Content

In Tunisia, the importance of NCDs and their impact were well recognized early in the 1990s. Organizationally, national programs for hypertension and diabetes were developed, and an NCD Management Unit was established within the Department of Primary Health Care. The first Strategic document on CVD was produced in 1999; anti-obesity strategy has developed within this context, while tobacco control has also developed in dialog. These came together in a 2008–2013 Action Plan on NCD Prevention and Control.

Reducing risk factors or arresting the rise in disease levels will, it was acknowledged, depend on adopting high-impact measures at the population level, coupled with active engagement of relevant health sectors. Yet key informants were skeptical whether the political will existed to implement this Acton Plan, which was dismissed as largely 'theoretical'. In the words of one of the NCD Program coordinators:

> There are two levels: the political commitment, and the implementation of the interventions. The awareness of NCDs determinants, burden and impact is impressive (I would put a score of 10/10), but it is clear that there is a gap between the political intention and the practice in the field.

Policy frameworks for CVD and diabetes also owed much to World Health Organization (WHO) guidelines and advice: regarding the need to building capacity in surveillance, or to develop a national program in primary health care. But there was ambivalence about how well its recommendations were adapted to the Tunisian context, as shown in this remark by a senior representative of a Tunisian scientific society:

> WHO plans and programs are elaborated in reference to the poorest countries, while Tunisia has already achieved important progress in the health system organization, regulations, infrastructure, personnel training.

Actors

In Tunisia, multiple actors were involved in NCDs prevention and control programs. In addition to the Ministry of Health (MoH) and international bodies such as the WHO, national legislators, regional councils, financiers, private health providers, researchers, the pharmaceutical industry and mass media all play a part. However, the MoH remains the key strategic and delivery institution, overseeing the governance of the health sector, including the planning and provision of the bulk of health services, primary, secondary and tertiary. The WHO has also been an important influence in NCD prevention and control; that influence has widened since 2011 Revolution through its strong support for the public participation involved in the Social Dialogue.

Alongside the public sector, a growing private sector exists in the main urban centers. Individual private practitioners have been part of the city healthcare landscape for many years; what was recent was the introduction of corporate finance and the emergence of new providers. The emerging private sector offers diagnostic services and specialist clinics, while a number of private polyclinics have been established in recent years, functioning as small private hospitals (Arfa and Achouri 2008). These were in principle regulated by the MoH. However, both the MoH and the clinics themselves believed that regulation was more theoretical than actual, and in reality such facilities worked with considerable—and increasing—autonomy (Abu-Zaineh et al. 2013a, b). Key informants in the private sector were also likely to be less influenced than their counterparts in the public sector by WHO pronouncements. As one figure in the private sector remarked:

> WHO is not the only reference [point]: its guidelines are not adapted to the private sector; the European and American Societies' ones are better adapted.

A third influential actor was the pharmaceutical industry, particularly working in tandem with the expanding private sector. The Tunisian pharmaceutical industry has grown considerably through over the past decade (Chaoui and Legros 2012), becoming a more influential interest group in the process. For national program coordinators in the MoH this presented problems, as some feared that pharmaceutical company influence encouraged private sector physicians to ignore guidelines and norms proposed by the MoH. One informant argued:

> The health sector is under the influence of pharmaceutical companies. The main sources of physicians' updates are the laboratories' prospectus. The pressure from the pharmaceutical lobby is a serious barrier for program implementation.

Non-governmental actors had little role up to 2010. The increase in NCDs had led to the creation of non-governmental organizations (NGOs) with a specific mandate to contribute towards NCD prevention. However, informants said these NGOs in practice had played virtually no role in policy or prevention. For some, the problem was a political one, in that to involve civil society groups in health strategy development required a degree of open debate and democratic underpinning that Tunisian society did not have in 2010. One informant put it like this:

> Civil Society is not prepared to face this emergent health problem [the rise in NCDs]…. There is a lack of strategy to involve the community, we should make choices, give priority to these questions.

Furthermore, there has as yet been no inter-sectoral collaboration to address NCDs. Despite lip-service being paid in documents to the necessity of cross-departmental collaboration, health remains an issue for the MoH alone. Potential partners in sectors which relate to health—agriculture, the food sector generally, industry, urban policy, for example—did not figure as actors in the current Tunisian situation. One frustrated informant put it like this:

> We have new needs induced by new health problems; NCD management is not limited to treatment and drugs, it must integrate interventions on causes and environment. We have difficulties to reform the old system to meet these needs. Other sectors must become more active to combat multifactorial diseases.

Context

The Tunisian health system has been based on a predominant public sector model organized on three levels: primary health care centers and local hospitals, regional hospitals, and general (University) hospitals. Since the Alma Ata Declaration, Tunisia has been committed to strong primary healthcare. As in similar national contexts, the state has been funder, provider and regulator of provision. Health care in Tunisia is financed through a combination of social health insurance, general government revenues, and private spending. Over the last decade or so, the state healthcare sector has had to accommodate a growing private sector. However, where hospitalization occurs, the public sector continues to be the main provider, with 85 % of total inpatient days and 87 % of all beds in public hospitals (whereas only 50 % of total outpatient visits are now to public hospitals) (Achour 2012). While private sector providers have been steadily incorporated into the healthcare delivery system, as public sector healthcare cannot meet public demand, coordination is limited.

In undertaking its purchasing and regulatory functions, the state often lacks vital information. Investment in health information systems was acknowledged to have been a low priority, and existing information systems were patchy and unconnected. This is critical for NCDs like CVD and diabetes, and the integration of NCD surveillance into national health information systems will be a major challenge for long-term planning and management. One informant summarized the problem of information like this:

> Our weakness is the information system. We have unfortunately lagged 20 years. As we do not have electronic transmission, [information] on risk factors and determinants, cause-specific mortality and health

> system performance is not available at the relevant time and level. It seems that only the information about hospital activities and financial aspects of patient hospitalization is recorded.

Moreover, this situation was regarded as unlikely to improve, as the lack of communication between the public and private sectors becomes ever more entrenched. At the same time, with social insurance covering a high proportion of the population (nearly 80 %), Tunisia is one of the MENA countries with sufficient institutional capacity to regulate the quality and availability of health services, as Elgazzar et al. (2010) noted. The public health insurance system has rapidly expanded its breadth of coverage, indicating that Tunisia could realistically hope to achieve close to universal coverage in the foreseeable future (Arfa and Achouri 2008; Saleh et al. 2014). Even so, as one informant acknowledged, costs still fall heavily on those who require health services, in the form of out-of-pocket expenditure. This is continuing to rise (Arfa and Achouri 2008; Elgazzar et al. 2010; Saleh et al. 2014):

> The burden is on the population's and family's shoulders, not on the health system or the social fund.

A further problem, widely mentioned, related to staffing. The growth of private healthcare facilitated opportunities for medical staff (especially doctors) to sustain dual working arrangements in both sectors. Typically this was expressed as a drain on the public sector, as key staff were known to default on their commitments in public hospitals or clinics. Recruitment, retention and training were all viewed by informants as problems primarily associated with a public sector where salaries were lower. This general problem was compounded in rural or remoter parts of the country, where doctors in particular were often reluctant to serve. One informant told us:

> Specialists are not interested in working in the interior of the country. The access to specialized care in remote areas remains very difficult, and the unmet need in these [areas] is still considerable… The public sector suffers from a problem of funds. The problem is more acute for remote areas that are the poorest and not covered by the social funds.

Tunisia is far from being unusual in this problem. Despite a declared policy aim of strengthening Primary Health Centers (PHC)—and the national programs to be delivered through primary health units which are theoretically to support prevention—the reality is that investment in primary health is low, and its status unlikely to be boosted in the near future. All official attention has been instead on tertiary hospitals, as the following remark shows:

> There are problems of funds for PHC centers and national programs, and the situation has been worsening because of the focus on hospitals. All the effort is concentrated on University hospitals..

Process

The previous three sections have indicated that a health system which theoretically recognizes the challenge of CVD and diabetes, in reality faces severe problems in meeting these challenges. Problems of integration and coordination compounded funding pressures as the state could not meet rising demands and expectations. Primary healthcare, intended as the bedrock of the MoH's response to the surge in CVD and diabetes, has been starved of funds and neglected. Referral pathways scarcely existed; health information, whether relating to patient information or service organization, was at best patchy and data could not be linked. Staff training needs were largely unmet and lacked coherence; while staff morale in the public sector was often low, particularly outside 'flagship' hospitals. The growth of private healthcare has been the main development filling the void. Its advocates professed its benefits, and argued that it is the future. Its critics counter that Tunisia is now starting down the road to an entrenched two-tier health system. These critics concede that the growth of a private sector has indeed benefitted the urban middle class, but argue that it has come at a damaging cost. For the process is accentuating urban–rural disparities, especially between coastal regions and the interior. The drain of staff away from the public sector, attracted to private companies offering much better pay and conditions of employment, further accentuates the existing divide. Coordination was an additional casualty of this growing divide between the two sectors. Inter-sectoral collaboration, meanwhile, was scarcely on the agenda. The issues were thus economic, political and social as well as clinical.

Many of our informants reflected on these issues in assessing the preparedness of the health system in Tunisia to deal with the burden of NCDs like diabetes and CVD. The two judgments below address some of the systemic challenges identified by key informants: the implications arising from the growth of the private sector, the burden for health budgets of the rapid increase in NCDs, and growing regional disparities:

> The attraction of the private sector is alarming. For CVD and diabetes management, the duality of Public/Private practice is a real problem: the MoH guidelines are not observed, regulation is weak. It is an abyss of money.

> The problem is that there are important disparities between the different regions; in the District of Tunis, we assume that the program is correctly implemented, but there are difficulties in the remote areas and less developed regions.

Informants also spoke of staffing shortages which are crucial for diabetes and CVD, and the consequences of weak training and morale:

> There is a lack of dieticians, they do not exist everywhere. They are essential for obesity, diabetes, pre-diabetes treatment. It is a pity, there is really good work done in the centers where there are dieticians. I assume that if the policy makers are aware of the importance to dieticians, they would provide funds to recruit them".

> GPs in primary health are not motivated. They do not come regularly to the post graduate training sessions, they remain with old ideas, and so their prescriptions are outdated.

These various institutional weaknesses were becoming increasingly critical as a consequence of the surge in NCDs. Tunisia's health system was designed to combat transmitted diseases, as informants habitually stated. Chronic conditions, by contrast, involve multiple causal pathways, and require a level of management that the state struggles to meet financially. Whatever strengths the current system had were described as being increasingly jeopardized by the rising prevalence of diseases like CVD and diabetes.

Discussion

NCDs present a complex challenge which demands interventions both within and outside the health sector. This article has provided the first analysis of the Tunisian health system based on qualitative research, combining document analysis and interviews with policy makers, health professionals and civil society representatives. Our findings shed light on several issues critical to policy that need to be taken into account in future reforms of the country's health system. These results should be extendable to other North African countries, for the structure, function and capacity of the health system in these countries has been largely influenced by the historical dynamics of institutional development across the main Maghreb countries (Ben Romdhane 2006; Chaoui and Legros 2012).

Like its neighbors, Tunisia has had a history of developing primary health care as a vital framework to foster care and commitment at the community level, and as a means to reduce health inequalities. Tunisia invested in social programs aimed at reducing poverty, improving literacy, increasing access to clean water and sanitation and environmental protection. Such policies helped to reduce the burden of communicable diseases leading to a marked decrease in infant and child mortality. However, the primary health system is not geared to manage NCDs such as CVD or diabetes care, with neither the funding, nor the staff skill and knowledge, nor the requisite information systems. Despite recognition of the problems NCDs pose for health care provision, the Tunisian health system has yet to confront these shortcomings, repeating a pattern of inadequate policy responses seen across most of the Arab world (Abdul Rahim et al. 2014). Because NCD care is barely integrated into PHC provision, patients face a lack of specialist staff, a shortage of essentials drugs, long waits for appointments, and lagging quality of service. These are the factors pushing them to the private sector. One crucial consequence of the growing recourse to private provision is that, despite Tunisia's health insurance coverage, out-of-pocket payments on health care have continued to rise. This has predictably accentuated household vulnerability to sudden economic shocks or longer-term poverty (Arfa and Elgazzar 2013; Elgazzar et al. 2010; Saleh et al. 2014). The result, already evident in recent research, is growing health inequality alongside growing social inequalities (Ben Romdhane and Grenier 2009; Boutayeb and Helmert 2011); indeed recent estimates suggest that health expenditure by households is responsible for nearly one fifth (18 %) of the increase in poverty in recent years (Abu-Zaineh et al. 2013a, b; Elgazzar et al. 2010). The inadequacy of the national response to the rise in NCDs stems partly also from the prevailing philosophy of care, for a 'diseased centered' approach has limitations with conditions such as diabetes or hypertension. Yet as the TAHINA (2006) study reported, health professionals insisted that they lacked either the time or the training for a more 'patient centered' approach.

At 10.9 % of government spending (2011 figures), Tunisia spends more on healthcare than many other MENA countries (WHO National Health Account database: http://apps.who.int/nha/database/DataExplorerRegime.aspx). The Social Dialogue, moreover, which was initiated by the government and civil society after the 2011 Revolution, has underlined the importance Tunisians attach to their health care institutions, and the political necessity of government committing to affordable and accessible healthcare.

Yet the surge in NCDs like diabetes and hypertension requires a government commitment not yet seen—of resources and strategy. It seems likely that the growing role of the private sector—reflected in the number of private clinics and hospitals, pharmacies, and laboratories—will fill the gap in public provision, but at the cost of further marginalizing those who struggle to pay, thereby accentuating the very inequalities which helped to precipitate the uprising in 2011.

In hindsight it is apparent that several crucial issues raised by our informants in 2010 were later highlighted during the popular protests of the political transition period: public concerns about widening socio-economic regional disparities, inequities in access to healthcare, a deficit of public trust in public health provision allied to a growing sense of deteriorating public healthcare, and the intensifying burden of expenditure for health treatment. These became part of public debate during the post-2011 transition in a way not seen previously in Tunisia. During this period, one of the authors of this article indeed found herself with an opportunity to promote further the integration of research conclusions such as ours in the burgeoning national debate, after being appointed as Minister of Health. The subsequent Social Dialogue was one outcome, advancing debate on reforming healthcare, addressing growing health inequalities, and enhancing social inclusion (notably the gaps in health care coverage for the most vulnerable households) (Arfa and Elgazzar 2013). In parallel to pressures from below, powerful pressures from above are also intensifying, with the World Bank, WHO and European Union each pushing reform of governance in the health system, with new demands framed in the idioms of transparency and health equity (World Health Organization 2010). At the time of writing, a strategy has been agreed to integrate the management of the four major groups of NCDs into primary healthcare in Tunisia. This is itself one outcome of these twin pressures from below as much as from above.

This study highlights major gaps in the implementation of a comprehensive approach to NCDs, which is an urgent task facing MoHs across the region. In strategic planning, research on the health system is vital; but the capacity within the MoH to use research has first to be built, with a commitment to grounding policy change in evidence. To date that has been lacking in Tunisia, but it needs to be prioritized in the national debate now going on about the shape of the future health system—a debate which has revealed considerable public expectations about participation in shaping the future.

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