Integrated care for HIV, diabetes and hypertension in Africa.

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Abstract

The rising burden from non-communicable diseases poses a huge challenge for health care delivery in Africa, where health systems are already struggling with the long-term care requirements for the millions of people now on antiretroviral therapy requiring regular visits to health facilities for monitoring, adherence support and drugs. The HIV chronic disease management programme is comparatively well-funded, well-organised and well informed; and offers many insights and opportunities for the expansion of non-communicable disease prevention and treatment services. Some degree of HIV and non-communicable disease service integration is essential, but how to do this without risking the HIV treatment gains is not known. Both HIV and non-communicable disease services are required to expand within a resource constrained environment, and policy makers are in urgent need of evidence to guide cost-effective and acceptable changes in these health services.

Introduction

Africa is undergoing a rapid health transition. Around the turn of the millenium, African health services were dealing principally with acute infections, such as malaria, pneumonia, tuberculosis and HIV with its associated opportunistic infections. Africa today faces a further massive health threat from non-communicable diseases, principally cardiovascular diseases, diabetes, cancers and chronic respiratory diseases. Here we discuss strategies for delivering health care services within this changing environment and argue for the need for integrated approaches to control common chronic (infectious and non-infectious) conditions.

The dual burden of HIV and non-communicable diseases

The HIV epidemic and the scale-up of antiretroviral therapy (ART) that followed, has posed a huge challenge for health care delivery. With over 25 million people living with HIV-infection in Africa and over one million new HIV infections a year, the number requiring long-term care is substantial. About 14 million people are now on ART in Africa requiring regular visits to health facilities for monitoring, adherence support and drugs.[1]

About 70% of deaths globally and 50% in low and middle-income countries are attributed to non-communicable diseases, with the largest proportion of these due to cardiovascular disease.[2] In sub-Saharan Africa, the burden from non-communicable diseases is estimated to overtake that of infectious diseases within the next 15 years.[3] Raised blood pressure and raised blood glucose are common risk factors for non-communicable diseases and are major drivers of mortality globally. In the 2016 Global Burden of Disease study, high blood pressure was the second leading risk factor for men and the leading risk factor for women globally based on attributable Disability Adjusted Life Years (DALYs).[4] Raised blood sugar caused 3.7 million deaths in 2012, of which 40% were caused by diabetes, a disease in its own right as well as a risk factor for other non-communicable diseases.[5] Over the next 30 years the greatest proportionate increases in diabetes and impaired glucose tolerance are expected to be in Africa.[6]

Both diabetes and hypertension are affecting younger persons in Africa than is the case in high-income countries, and affecting both the affluent and the poor.[7] Most of the studies done to describe the burden of non-communicable diseases in Africa have used weak study designs but it now is clear that diabetes prevalence alone exceeds 5% in adults and the figure for hypertension is over 20%.[7-9] Diabetes and hypertension can remain asymptomatic for long periods of time. They are relatively easy to diagnose and this provides opportunities for their early identification and management. A very large proportion of the non-communicable disease burden could be prevented by effective control of diabetes and hypertension.

The health systems response to HIV, hypertension and diabetes

HIV services with ART provision were established as stand-alone (vertical) programmes as an emergency response to the HIV epidemic. The scale of the services and funding requirements were high. There was a need for close clinical and programmatic monitoring and evaluation, and research to run alongside service provision. It is unlikely that African health systems would have been able to deliver the scale and quality of care required unless HIV services were organised vertically. HIV programmes have been comparatively well funded, well-organised and have successfully treated and retained patients in care resulting in significant reductions in HIV related mortality. We have known for some time that in this context, the key to success is to get the patient into care, to make services accessible and to support treatment adherence [10]. HIV is now a chronic disease that has continued to be largely managed vertically in primary care. [11,12]

Health service provision for non-communicable diseases remains very limited, with services being offered as standalone and typically within hospitals and larger health centres.[13,14] Only about 5-10% of persons with diabetes are thought to be in regular diabetes care[7] and the figure is likely to be similar for hypertension.[9,15] The vast majority of individuals are identified after they develop complications, which leads to poor outcomes, and to high costs

to both the health service and the patient. For those in care, health service provision for the diagnosis and management of diabetes and hypertension is patchy.[7,13,14,16,17]

Several studies have looked at the readiness of health services to scale up the management of non-communicable diseases in Africa, and have found gaps in the services and resources available to identify and manage non-communicable diseases including lack of staff, lack of access to treatment protocols and diagnostic equipment, and an inconsistent supply of essential drugs, training, supervision and monitoring to manage the conditions.[13,14,18] Decentralising services and task-shifting to lower-level clinical cadres and to non-clinical staff working under the supervision of clinical staff at higher-level health facilities will be essential to improve delivery of non-communicable diseases services, as was done to increase coverage for HIV-services.[19]

We know that primary prevention of diabetes, hypertension and non-communicable diseases through promotion of diet and lifestyle changes is essential but this has proved hugely challenging in high-income countries and will be an even bigger challenge in Africa where resources for disease control and prevention are more limited. We have also learnt from HIV prevention, that primary prevention without treatment services does not work; to primarily prevent non-communicable diseases, clinical management services should be available for those with non-communicable diseases that bring populations into contact with health care providers.

How should future non-communicable diseases programmes be organised? Do we establish further vertical programmes alongside a vertical HIV programme or should chronic care services be integrated?

The establishment of vertical non-communicable disease programmes is unlikely both for economic and pragmatic reasons and some degree of integration of HIV and non-communicable disease services will be essential. However, how and at what level this integration should occur and how best to support the effective delivery of these programmes is not clear.[20,21]

What do we know about integration of services?

Most of the available evidence around integration relates to integration of services that are used by patients for relatively short durations. A Cochrane systematic review done in 2001 and updated in 2007 and 2011 found that there were no obvious benefits to such integration and that in some cases integration reduces knowledge and utilisation of specific services [22-24], but that the available evidence was weak. The available evidence on the integration of non-communicable disease and HIV programmes is scarce, although a variety of models have been reported in the literature.[25] Many of these models have developed out of donor-funded projects with little evidence on scaling up. A recent systematic review on integrating HIV, diabetes and hypertension concluded that the evidence in this area was very weak and that robust and longer term studies were needed.[26]

Why integrate HIV and non-communicable disease services and what are the risks of doing this?

Potential advantages of integration: Integrated services for the different chronic conditions would reduce duplication and fragmentation of services and could be efficient. It would also extend coverage of an essential service. It would be hugely convenient for patients with co-morbidities (diabetes and hypertension prevalences are around 5% and 20-30% respectively in adults [7,9,27,28]). HIV programmes have been comparatively well-funded and well-organised and bringing HIV and non-communicable diseases services together would enable non-communicable diseases services to be delivered from a strong platform. In HIV, experience has been acquired in managing HIV as a chronic disease, including linking and retaining patients in care and supporting treatment adherence, community engagement, in drugs and diagnostics procurement and other key systems factors. Integration of services would mean that these practices can be applied quickly to non-communicable disease control.

The potential benefits for HIV programmes moving to integration with other chronic conditions are less clear. HIV has had a special status, and this may have contributed to stigma, which in turn prevents people accessing health services. Managing HIV-infection like any other chronic condition could reduce the stigma, making control of HIV-infection more effective. For clinical staff working in HIV clinics, capacity development in non-communicable diseases management could be attractive, enabling rapid access to both HIV and non-communicable disease services.

Potential dangers:

The danger with integration is that it could weaken HIV service delivery due to the increased patient volume and the increased diversity of clinical conditions for which health care has to be planned.

HIV prevalence among adults is typically 5-7% in Africa and treatment coverage of HIV-infected persons is about 60% in eastern and southern Africa, and 35% in western and central Africa.[29] Non-communicable diseases are more common and there is presently limited provision of health services for these conditions. [7,13,14] Integration of HIV and non-communicable diseases services will mean an expansion of service provision for non-communicable diseases as well as dealing with the continuing challenge of HIV service provision. There may be unwillingness by HIV services and funders to give up their comparatively healthy financial positions and risk their successes with integration of services. Policy makers will need clear evidence of the potential benefits and likely harms of integration for HIV-infection and non-communicable diseases before they consider any changes to clinical practices.

Because integration will need an expansion of health service provision, even more sustainable (i.e. low cost and effective) approaches to delivering chronic care services on a large scale will need to be identified. In HIV infection, selected services can be decentralised from a hospital to a large health centre and that many of the tasks that were once undertaken by doctors can be undertaken by part-qualified doctors and nurses.[12,19] Evidence on whether government health services for chronic care could be further decentralised and delivered with further task-shifting, while maintaining the quality of care, is limited, and urgently requires interdisciplinary research to inform policy[30].

With the double burden of infectious and chronic non-communicable diseases in Africa, significant action will have to be taken to meet United Nations sustainable development goal (SDG) 3 to "ensure healthy lives and promote well-being for all at all ages" , and achieve targets to improve coverage of and access to health services for non-communicable diseases.[31] Service expansion has to occur in a resource constrained environment. In low resource settings about 57% of expenditure on the response to HIV-infection comes from domestic sources and countries are under increasing pressure to fund a greater proportion of their HIV programmes.[29,32] Policy makers and health service managers are under growing pressure to ensure these services are provided and are urgently in need of evidence to inform cost effective changes in health services that patients find acceptable. Without evidence, it is possible that changes made out of necessity may compromise the considerable progress that HIV programmes have made. This is a critical opportunity to develop services that will be able to continue sustainably, leveraging the experience and investment that HIV treatment services have brought.

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