Mental Health in Family Medicine 2011;8:119–27

Article

Health system challenges and solutions to improving mental health outcomes

Rachel Jenkins MA MB BChir MD (Cantab) FRCPsych FFOHM MFPH (Dist)
Professor of Epidemiology and International Mental Health Policy, King's College London, Institute of Psychiatry, London, UK

Florence Baingana MB ChB MMed (Psych) MSc (HPPF)
Wellcome Trust Research Fellow, Makere University School of Public Health and Personal Social Services Research Unit, London School of Economics and Political Sciences, London, UK

Raheelah Ahmad PhD BSc DIC
Research Fellow, Faculty of Medicine, Imperial College, London, UK

David McDaid MSc BSc
Senior Research Fellow in Health Policy and Health Economics, LSE Health and Social Care and European Observatory on Health Systems and Policies, London School of Economics and Political Sciences, London, UK

Rifat Atun MB BS MBA DIC FRCGP FFPH FRCP
Professor of International Health Managment, Imperial College, London, UK

And Imperial College Business School

Introduction

This is the fourth paper in our series of four articles on mental health and the global development agenda. The first paper addressed core conceptual issues in mental health,[1] the second addressed social and economic challenges to getting mental health on the global agenda,[2] the third addressed international and national policy challenges to developing and implementing mental health policy in countries[3] and this fourth paper addresses health system challenges to the development and implementation of mental health policy.

Strengthening health systems in resource-constrained settings

Resources for health in low-income countries, especially in the countries of sub-Saharan Africa (SSA), are extremely low compared to those in the developed world. Among World Health Organization (WHO) member states in SSA, 33 spend less than US $50 per capita per year and 11 of these spend less than US $10 per capita per year on health.[4] By contrast, in 2008 total health expenditure per capita in the UK and the USA was US $3129 and US $7538 respectively.[5]

Coinciding with the emergence of 'accountable government', health reforms in SSA began in the 1990s to strengthen centralised, inefficient, ineffective, donor-driven and unresponsive health systems. Reforms often included the development of national policies or plans, decentralisation, an emphasis on financing and delivery of a limited set of cost-effective prioritised health interventions and integration of targeted health programmes. Such programmes were typically funded by external donors and developed separate 'vertical' logistics, distribution, supervisory, monitoring and evaluation systems from the centre to the periphery. Many of these health sector reforms undermined targeted disease programmes.[6] As a response, more recently in a number of countries donor funding, hitherto project-based, has been directed towards programme financing, pooled through government-led sector

wide approaches (SWAps) or provided as budget support.

These reforms bring both challenges and opportunities for mental health, especially their inclusion in sector policy and plans and accessing pooled funds. In spite of good evidence on the disease burden caused by mental health and the cost-effectiveness of investments in mental health, in 2005 (the most recent year for which data is available) only 59 (21 in SSA) of 185 WHO member states which provided health financing information to the WHO ATLAS project had a budget line for mental health in their ministry of health budgets.[4] In low- and middle-income countries, where historically mental health has not been a priority, such a budget line is crucial, as without it additional government-managed funds cannot be obtained.[7]

Scarce resources elicit counterproductive competition rather than collaboration between organisations and personnel working on communicable and non-communicable diseases. It is unusual in any part of the world to find these specialisations collaborating within the health system. Although recently donors globally have committed to increases in aid to low- and middle-income countries, the global economic crisis has meant both domestic and international funding for health has declined.

The commitment by the United Nations (UN) member states to the Millennium Development Goals (MDGs) in 2000 was critical in mobilising new and additional donor financing for health, which increased from US $5.6 bn in 2000 to US $21.8 bn in 2007.[8] Much of this new funding targeted communicable diseases – AIDS, tuberculosis, malaria and vaccine preventable diseases affecting children – which accounted for a large proportion of the disease burden in low- and middle-income countries when the MDGs were established. A large proportion of this funding was channelled through non-governmental organisations (NGOs).[8]

However, a growing body of evidence also points to a rapid increase in low- and middle-income countries of non-communicable diseases, including mental health and cancer, which in many of these countries now account for the bulk of the disease burden.[9] This contrasts with the prevailing belief that non-communicable diseases are mainly a problem in rich rather than poor populations. It is not surprising, therefore, that global health partnerships focus on communicable rather than non-communicable diseases. Furthermore, the global health partnerships and initiatives that dominate global health tend to focus on specific diseases such as AIDS, tuberculosis and malaria and maternal, neonatal and child health rather than on strengthening health systems.

Non-communicable diseases such as mental disorders are strongly associated with increased risk of morbidity and mortality from physical health problems, including cardiovascular disease, diabetes, HIV/AIDS and other infectious diseases.[10–14] Conversely, conditions such as AIDS and diabetes lead to increased morbidity from mental illness. In addition, mental disorders can have a significant and long lasting impact on maternal and child health.[15,16]

Internationally, there have been calls to increase attention to mental health and to expand the availability of mental health services in low- and middle-income countries.[11,17–25] Recent epidemiological studies indicate that globally mental disorders account for a significant proportion of public health problems.[26–30] Neuropsychiatric disorders represent 13% of the global disease burden (as estimated by the Disability Adjusted Life Years (DALYs)).[31] The burden of major depression is expected to rise by 2030 from the fourth to the second leading cause of global disease burden as measured by DALYs.[32,33] Many of these disorders are chronic, and unless successfully treated are accompanied by severe disability and increased risk of mortality from co-morbid physical health problems.[21,34]

Evidence also points to the availability of cost-effective interventions in high-, middle- and low-income countries.[28,35–37] Through use of effective treatment guidelines and support for mental health policy and programme development,[38] a number of high-, middle- and low-income countries have successfully integrated mental health into primary health care to expand population coverage.[17,34,39–42]

However, despite the large disease burden, the inextricable links to poverty and strong association with communicable diseases such as AIDS, tuberculosis and malaria, mental health is not explicitly included in the MDGs,[43] and is rarely featured in policy statements or the operational plans and reports of key health and development agencies such as the World Bank and the WHO or in the generic policies of low- and middle-income countries. When such policies exist, the links with plans and budgets in health and non-health sectors for mental health remain weak, and with very limited resources with which to implement them.

Health systems in low-income countries: overburdened and under-resourced

Chronic underfunding, unstable political contexts, high disease burden, inadequate human resources and inefficient allocation continuously challenge health systems in low-income countries.

We have noted that mental illnesses, a key determinant of poverty, are a major source of disease burden in low- and middle-income countries. Much of this morbidity and mortality is potentially avoidable but largely overlooked, unlike major communicable diseases such as HIV, malaria and tuberculosis, which have rightly benefited from substantial international financing since 2002.

International and domestic health policy makers, faced with many conflicting demands, prioritise a few disorders rather than taking a comprehensive public health approach. Disease priorities have historically been influenced by mortality data, but such mortality data ignore co-morbidities and do not account for the fact that poor mental health is a trigger for premature mortality from physical health disorders. Increased rates of HIV and tuberculosis are found in those with mental health problems and those affected by HIV and tuberculosis suffer a higher burden of mental illness.[44,45]

Hence, policy decisions related to prioritisation of health care should not focus on mortality alone but should also consider morbidity, both in its own right and morbidity due to links between health conditions. In addition, consideration should be given to the determinants of illness and the substantial economic costs associated with untreated conditions, such as mental illnesses that are avoidable and which, when treated, confer benefits on individuals, their families and the wider economy.[27,30,34,46]

Disease burden from mental disorders remains unaddressed

The burden of most non-communicable disorders (NCDs) is rapidly rising in low-income countries due to changing lifestyles and diets,[47–50] including mental disorders.[30,51,52] Mental disorders make up the biggest disability burden among NCDs.[28] Yet, despite the large disability burden relative to diabetes, asthma, or cardiovascular disease, mental disorders are often not addressed in NCD agendas.

Despite representing 8% of the disease burden in high-mortality low- and middle-income countries,[53] mental health does not receive any specific health budget in most African countries. The vast majority of those countries that do have a specified budget allocate less than 1% of their health budget to mental health.[4,54]

Some argue that inclusion of mental health in the health development agenda and country priorities would overburden the already stretched weak health systems in low- and middle-income countries. However, in these countries clients with mental disorders often attend health centres and are frequently misdiagnosed or when diagnosed remain untreated. The multi-country study of Ustun and Sartorius showed that 30% of people attending primary care level services have mental disorders, and most remain undiagnosed or are erroneously diagnosed as having a physical illness.[55] Exclusion of mental disorders from the essential package of health care does nothing to alleviate this overload. Thus, many people with depression and anxiety present to primary and secondary level health clinics with somatic symptoms, which in SSA are usually misdiagnosed as malaria, typhoid, amoebiasis and other conditions.[55]

If undiagnosed and untreated, patients with mental disorders have a high rate of repeat consultations, thus placing an additional burden on health systems. For example, a study in a health centre in Nairobi, Kenya found that 44.8% of patients attending the centre had psychiatric morbidity, predominantly anxiety and depression.[56] All these patients were misdiagnosed by the primary care workers, although they had repeated consultations over time. Some had been investigated for malaria and typhoid and treated for those conditions, with no improvement.

Analysis of resource flows for mental health

Table 1 provides a snapshot of resource flows at international level for mental health, showing the proportion of the health budget allocated to mental health in various international and bilateral organisations. This data has limitations as the data are not audited and there are different financial years for which data are available. Moreover, the reporting approaches and definitions differ; for example the boundaries of 'health budgets' vary between countries and 'mental health budgets' are difficult to track as they may be included as 'psychosocial' budgets. Nonetheless it is clear that resources from international organisations remain limited, although the Department for International Development (DFID) is spending about 10% of its health related budget on mental health activities.

Table 1 Budget summary in health vs mental health by major donors

	Health expenditure	Mental health expenditure	
	Total	Total	% of all expenditure
WHO[a]	2 944 397[1]	20 675	0.7
WB[b]	6305.5[2]	n/a	n/a
DFID[c]	41 099[3]	3732	9.1
NIF[d]	2507[4]	160	6.4
SIDA[e]	2721[5]	21.2	0.8
CORDAID[f]	36 906[6]	n/a	n/a
DANIDA[g]	93.83[7]	n/a	n/a

[a] World Health Organization. *Financial Report 2004–2005*. Geneva: World Health Organization, 2006
[b] The World Bank. *The World Bank Annual Report 2009*. Washington, DC: The World Bank, 2009
[c] Department for International Development. *Annual Report and Resources Accounts 2008–2009*. London, UK: Department for International Development, 2009
[d] The Nuffield Foundation. *Report and Financial Statements 2008*. London, UK: The Nuffield Foundation, 2009
[e] Swedish International Development Cooperation Agency. *Facts and Figures 2004. Health sector*. Stockholm, Sweden: Swedish International Development Cooperation Agency, 2005
[f] Catholic Organisation for Relief and Development Aid. *Annual Accounts 2008*. The Hague, Netherlands: CORDAID, 2009
[g] Danish International Development Agency. *Danida's Annual Report* 2005. Copenhagen, Denmark: Ministry of Foreign Affairs of Denmark, 2006
[1] Total expenditure in thousands of US dollars for the financial period 2004 to 2005
[2] Total lending in millions of US dollars for the financial year 2009 for 'Health and other Social Services'
[3] Total expenditure in thousands of GBP for the financial period 2008 to 2009 for 'Global Health Partnership' and 'Health, AIDS and Education'
[4] Total expenditure in thousands of GBP for the financial year 2008 for 'Science' and 'Adolescent Mental Health'
[5] Total expenditure in millions of SEK (Swedish Krona) for the financial year 2004. The total for mental health is composed of 'mental health' (3.9 MSEK) and 'substance abuse' (17.3 MSEK)
[6] Total expenditure in thousands of euros for the financial year 2008 for 'Health and Well-being'
[7] Total expenditure in millions of US dollars for the financial period 2004 to 2005

Health systems factors that constrain or enable delivery of mental health care

Integration of mental health services with social care, education and criminal justice systems

For effective implementation, mental health policies should be developed separately but well integrated into health, social and educational policies and strategic action plans. Similarly, mental health needs to be integrated into national annual operational plans and the national essential package of health interventions. But in practice such integration is difficult and requires strong advocacy, encouragement by major donors and support from relevant ministers or local champions, as well as civil servants inside ministries of health able to achieve the practical integration into the relevant official documentation.

For example, in Kenya a primary care training project funded by the UK NGO the Nuffield Trust allocated additional funds to build psychiatric nurses' capacity to conduct such advocacy, and give them planning and budgeting skills. This led to increased numbers of districts including mental health in their district annual operational plans.[41] In Uganda, the WHO, the Ministry of Health and other bilateral donors support annual meetings of District Mental Health Coordinators so they are able to plan, budget, implement and monitor their programmes, thus accessing district level and national level funds.[57]

Financing

Sustaining the funding of healthcare systems in low- and middle-income countries is challenging because of the difficulties in making use of tax and/or social health insurance mechanisms. In most low-

income countries people continue to pay for the majority of health services they receive.[58] While user fees can help generate revenue for health systems and in some circumstance reduce inappropriate use of services, they pose a significant barrier to health service use for poor people, especially those with chronic illness.

Infrastructure and human resources

Mental health is an intersectoral issue, with interventions required in education, social welfare, criminal justice systems and the NGO sector. Nonetheless significant inputs are needed from the health sector to address mental health problems. However, in low- and middle-income countries, the health infrastructure to address these needs is highly limited. For example, Tanzania has 13 psychiatrists in the public sector for a population of 32 million while Kenya has 16 psychiatrists in the public sector for a population of around 30 million.[4] Both Kenya and Tanzania each have around 200 psychiatric nurses, but these numbers are falling rapidly with movement out of mental health care to more lucrative programmes, as well as because of retirement and mortality.

With good assessment, diagnosis, a management plan and sustained follow up to full recovery people with depression and anxiety can mostly be treated at primary care level. A small proportion will not respond well and will require referral to district level. Although in the west all new clients with psychosis are referred to specialists, in low-income countries there are too few specialists for this to be the norm (e.g. a 1% population prevalence of psychosis and less than one psychiatric nurse per district of between 100 000 and 250 000), so that most people with psychosis are attended to by primary care staff or traditional healers and only a small proportion are seen by specialists, with children with mental disorders mostly missed and ignored except in the private clinics of the capital cities.

Integration of mental health with primary care or HIV, tuberculosis, malaria, child health and reproductive health programmes

Effective integration of different programmes at primary care level could enhance client focus and improve efficiency of care delivery. Yet in many settings effective integration is difficult to achieve, as it requires political commitment, time for joint planning and appropriate training of staff so that health professionals consider holistic management of patients as part of their roles and responsibilities.

Integration of mental health information systems with routine information systems

Mental disorders or health in most low- and middle-income countries are not adequately captured in routine health information management systems (HIMS). While donors and countries ask for data to demonstrate outcomes and value for money for mental health investments, funding to incorporate mental health into HIMS is all but absent. For example, in Kenya and Tanzania data from primary care facilities are collected for 36 physical health diagnoses, but all mental disorders are included as one diagnosis, thus reducing the utility of this data for planning purposes.

In Uganda, several categories of mental disorders have been added to the HIMS form: depression, anxiety, manic illness, schizophrenia, alcohol and drug abuse, childhood mental disorders, epilepsy and 'others'.[59,60] This is good progress, but for a good core data set around 14 categories are needed for planning purposes, to include; depression, anxiety, bipolar disorder, schizophrenia, childhood conduct disorder, childhood emotional disorder, attention deficit disorder, autism, post-traumatic stress disorder, dementia, toxic confusional state, learning disability, alcohol abuse and drug abuse. Furthermore, diagnosis of mental disorders at primary care level is often likely to be inaccurate, underestimating the disease burden. For example, a recent survey in ten districts of Uganda using the 12-item General Health Questionnaire (GHQ-12) as part of the exit interview for people in outpatient and antenatal clinics showed that up to 30% of those interviewed identified themselves as having a mental disorder, confirmed by high scores on the GHQ-12. However, the HIMS data only captured a minuscule number of these cases.[60]

Access to medicines, support and supervision, and demonstrated gaps in care

Most generic medicines are of similar efficacy to the newer more expensive psychotropic medicines that have improved side-effect profiles albeit without significantly better health outcomes.[61–63] Hence, low-cost generics can be used in low- and middle-income countries to address the vast majority of mental disorders. However, even if financing is available procurement and regular supply of these medicines remains a challenge, leaving many clients with treatment interruptions. Provision of an uninterrupted supply of affordable medicines requires predictable financing and strengthening of supply chain management systems, as part of health system strengthening efforts that include training of health staff.

Uganda has introduced a system where the health units are allocated a primary healthcare budget for use in drug purchases and other supplies at least six times a year. However, the country is still unable to provide a steady supply of drugs to treat mental disorders, including those on the essential drug list, as they are not requested by health units. This means that drugs are going to waste, reaching their expiry in the National Medical Stores.[57]

Conclusion

International financing for mental health has been disproportionately small in relation to the global disease burden it presents, and the potential synergies with investments for AIDS, tuberculosis and malaria have not been appropriately realised. Most national plans inadequately address mental health – partly because of limited planning capacity within countries, partly because technical consultants often have limited understanding of mental health in relation to national planning, and partly because of a lack of country donor requirements for the inclusion of mental health.

Health systems constraints have limited the scaling up of mental health interventions, especially the limited availability of specialist staff for support and supervision to help promote services within primary care, and for leadership of specialist service development at district, regional and national levels. While there is substantial evidence on efficacy and effectiveness of mental health interventions in high-income countries, the evidence base from low- and middle-income countries is limited, especially in relation to cost-effectiveness of interventions.

This series has analysed the issues and contains an agenda for action in response to the economic, social and health problems posed by poor mental health and mental disorders. Its objective is to assist governments and donor agencies to examine, and where appropriate, strategically strengthen their approaches to public health to prevent and control mental disorders; to build mental capital to support achievement of the MDGs; and to take action on health in general including communicable and non-communicable disease.

We propose that the central strategy is to include mental health into the basic package of essential health services, especially those delivered by primary care. This would require few additional national costs, relative to other programme areas. Recent mental health policies have emphasised the cardinal importance of integration of mental health into primary care for achieving population access to mental health care.[23,34]

We also propose that policies to strengthen health systems should consider mental health, and health policies should include the core elements of a mental health strategy, especially integration of mental health into primary care and decentralisation of mental health specialist services to the district level. This will help to ensure client-focused services, strengthen primary care (which is currently facing the heavy burden of mental disorders without carefully adapted and tailored training), medicines, information systems, support and supervision, and to expand access to local referrals which are essential to achieve good outcomes for both mental disorders and their impact on physical health.

Addressing mental illness in low- and middle-income countries will also reduce the burden from AIDS, tuberculosis and malaria and will help to alleviate poverty, thereby contributing to the MDGs and advancing human rights, in particular the right to health and the right to receive care in the least restrictive environment compatible with health and safety.

We conclude by recommending that effective policies to address mental illness should be multisectoral, requiring a holistic approach and strengthening of intersectoral linkages between health and education, social welfare, employment, criminal justice and housing, and underpinned by human rights approach that provides for people with mental illness the right to health and equitable population access to mental health care.

REFERENCES

1 Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. Mental health and the global agenda: core conceptual issues. *Mental Health in Family Medicine* 2011;8:69–82.

2 Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. Social, economic, human rights and political challenges to global mental health. *Mental Health in Family Medicine* 2011;8:87–96.

3 Jenkins R, Baingana F, Ahmad R, McDaid D and Atun R. International and national policy challenges in mental health. *Mental Health in Family Medicine* 2011;8:101–14.

4 World Health Organization (WHO). *WHO Mental Health Atlas 2005*. Geneva: WHO, 2005.

5 Organisation for Economic Cooperation and Development (OECD). *OECD Health Data 2010*. Paris: OECD, 2010.

6 Atun R, Weil DE, Eang MT and Mwakyusa D. Health-system strengthening and tuberculosis control. *The Lancet* 2010;375:2169–78.

7 Örtendahl C. *The Uganda Health SWAp: new approaches for a more balanced aid architecture?* London: HLSP Institute, 2007.

8 Ravishankar N, Gubbins P, Cooley R *et al*. Financing of global health: tracking development assistance for health from 1990 to 2007. *The Lancet* 2009; 373:2113–24.

9 Farmer P, Frenk J, Knaul F *et al*. Expanding cancer care and control in developing countries: a call to action. *The Lancet* 2010;376:1186–93.

10 Harris EC and Barraclough B. Excess mortality of mental disorder. *British Journal of Psychiatry* 1998; 173:11–53.

11 Desjarlais R, Eisenberg L, Good B and Kleinman A. *World Mental Health: problems and priorities in low-income countries*. Oxford: Oxford University Press, 1996.

12 Katon W. The comorbidity of diabetes mellitus and depression. *American Journal of Medicine* 2008;121: S8–15.

13 Pence B. The impact of mental health and traumatic life experiences on antiretroviral treatment outcomes for people living with HIV/AIDS. *Journal of Antimicrobial Chemotherapy* 2009;63:636–40.

14 McDaid D. *Bridging the Gap between Physical and Mental Health*. Brussels: Mental and Physical Health Platform, 2009.

15 Patel V, Rahman A, Jacob KS and Hughes M. Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. *BMJ* 2004;328:820–3.

16 Rutter M and Quinton D. Parental psychiatric disorder: effects on children. *Psychological Medicine* 1984;14:853–80.

17 Baingana F. Mental health services in Africa for the 21st century: issues, challenges and opportunities. In: Akukwe C (ed) *Healthcare Services in Africa: overcoming challenges, improving outcomes*. London: Adonis and Abbey Publishers Ltd, 2008, pp. 118–32.

18 Eisenberg L. Psychiatry and health in low income populations. *Comprehensive Psychiatry* 1997;38:69–73.

19 Murray C and Lopez A. *The Global Burden of Disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020*. Boston, MA: Harvard University Press, 1996.

20 Jenkins R. Reducing the burden of mental illness. *The Lancet* 1997;349:1340.

21 Jenkins R, de Vries M, Eisenberg L and Kleinman A. WHO: where there is no vision, the people perish. *The Lancet* 1997;350:1480.

22 Jenkins R. World Health Day 2001: minding the world's mental health. *Social Psychiatry and Psychiatric Epidemiology* 2001;36:165–8.

23 WHO. *World Health Report 2001. Mental health: new understanding, new hope*. Geneva: World Health Organization, 2001.

24 WHO. *World Health Report 2002. Reducing risks, promoting healthy life*. Geneva: World Health Organization, 2002.

25 Lancet Global Mental Health Group. Scale up services for mental disorders: a call for action. *The Lancet* 2007;370:1241–52.

26 Mbatia J, Jenkins R, Singleton N and White B. Prevalence of alcohol consumption and hazardous drinking, tobacco and drug use in urban Tanzania, and their associated risk factors. *International Journal of Environmental Research and Public Health* 2009;6:1991–2006.

27 Jenkins R, Mbatia J, Singleton N and White B. Prevalence of psychotic symptoms and their risk factors in urban Tanzania. *International Journal of Environmental Research and Public Health* 2010;7: 2514–25.

28 Hyman S, Chisholm D, Kessler R, Patel V and Whiteford H. Mental health disorders. In: Jamison DT, Breman JG, Measham AR *et al* (eds) *Disease Control Priorities in Developing Countries* (2e). New York, NY: Oxford University Press, 2006, pp. 605–26.

29 Kessler R, Aguila-Gaxiola S, Alonso J *et al*. The global burden of mental disorders: an update from the WHO World Mental Health (WMH) surveys. *Epidemiologia e Psichiatria Sociale* 2009;18:23–33.

30 Kessler R and Ustun T (eds). *The WHO World Mental Health Surveys: global perspectives on the epidemiology of mental disorders*. New York, NY: Cambridge University Press, 2008.

31 WHO. *The Global Burden of Disease: 2004 update*. Geneva: World Health Organization, 2008.

32 Mathers C and Loncar D. *Updated Projections of Global Mortality and Burden of Disease, 2002–2030: data sources, methods, and results*. Evidence and Information for Policy Working Paper, 2005.

33 Mathers CD and Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine* 2006;3:e442.

34 WHO/Wonca. *Integrating Mental Health into Primary Care: a global perspective*. Geneva: World Health Organization, 2008.

35 Chisholm D. Choosing cost-effective interventions in psychiatry: results from the CHOICE programme of the World Health Organization. *World Psychiatry* 2005;4:37–44.
36 Chisholm D, Flisher A J, Lund C *et al*. Scale up services for mental disorders: a call for action. *The Lancet* 2007;370:1241–52.
37 Gureje O, Chisholm D, Kola L, Lasebikan V and Saxena S. Cost-effectiveness of an essential mental health intervention package in Nigeria. *World Psychiatry* 2007;6:42–8.
38 WHO. *Mental Health Policy Project. Policy and service guidance package: executive summary*. Geneva: World Health Organization, 2001.
39 Whiteford H, Buckingham B and Manderscheid R. Australia's National Mental Health Strategy. *British Journal of Psychiatry* 2002;180:210–15.
40 Ovuga E, Boardman J and Wasserman D. Integrating mental health into primary health care: local initiatives from Uganda. *World Psychiatry* 2007;6:60–1.
41 Jenkins R, Kiima D, Njenga F *et al*. Integration of mental health into primary care in Kenya. *World Psychiatry* 2010;9:118–20.
42 Mbatia J and Jenkins R. Development of a mental health policy and system in Tanzania: an integrated approach to achieve equity. *Psychiatric Services* 2010;61:1028–31.
43 United Nations. *The Millennium Development Goals Report*. New York, NY: United Nations, 2007.
44 Altice F, Kamarulzaman A, Soriano V, Schechter M and Friedland G. Treatment of medical, psychiatric, and substance-use comorbidities in people infected with HIV who use drugs. *The Lancet* 2010;376:367–87.
45 Deribew A, Tesfaye M, Hailmichael Y *et al*. Common mental disorders in TB/HIV co-infected patients in Ethiopia. *BMC Infectious Diseases* 2010;10:201.
46 McDaid D, Knapp M and Raja S. Barriers in the mind: promoting an economic case for mental health in low- and middle-income countries. *World Psychiatry* 2008;7:79–86.
47 Mbanya J and Ramiaya K. Diabetes mellitus. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 267–88.
48 Mbewu A and Mbanya J. Cardiovascular disease. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 305–27.
49 Sitas F, Parkin M, Chirenje Z, Stein L, Mqoqi N and Wabinga H. Cancers. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 289–303.
50 Steyn K and Damasceno A. Lifestyle and related risk factors for chronic diseases. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 247–65.
51 Baingana F, Alem A and Jenkins R. Mental health and the abuse of alcohol and controlled substances. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006, pp. 329–50.
52 Baingana F and Bos E. Changing patterns of disease and mortality in Sub-Saharan Africa: an overview. In: Jamison DT, Feachem RG, Makgoba MW *et al* (eds) *Disease and Mortality in Sub-Saharan Africa* (2e). Washington, DC: The World Bank, 2006.
53 WHO. *World Health Report 2002. Reducing Risks, promoting healthy life*. Geneva: WHO, 2002.
54 Saxena S, Thornicroft G, Knapp M and Whiteford H. Resources for mental health: scarcity, inequity, and inefficiency. *The Lancet* 2007;370:878–89.
55 Sartorius N, Ustün T, Costa e Silva J *et al*. An international study of psychological problems in primary care. Preliminary report from the World Health Organization Collaborative Project on 'Psychological Problems in General Health Care'. *Archives of General Psychiatry* 1993;50:819–24.
56 Kiima D. *Psychiatric Morbidity Among Patients Attending a Primary Health Care Facility from a Deprived Community in Nairobi*. Nairobi, Kenya: Department of Psychiatry, University of Nairobi, 1987.
57 Baingana F. Mental health services in Uganda: analysis and documentation of the implementation of integration of mental health into primary health care. Dissertation for the MSc Health Policy, Planning and Financing for the Department of Social Policy, London School of Economics and Political Sciences.
58 WHO. *Health Systems Financing: the path to universal coverage*. Geneva: World Health Organization, 2010.
59 Baingana F. *Mental Health Services in Uganda 1999–2009: analysis and documentation of the implementation of the integration of mental health into primary health care*. London: London School of Economics and Political Science and London School of Hygiene and Tropical Medicine, 2010.
60 MUSPH. *Reproductive and Mental Health Baseline Survey in Ten Districts of South Western Uganda: consultancy report*. Kampala: Project Management Unit, SHSSPP, 2010.
61 Lieberman J, Stroup T, McEvoy J *et al*. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *New England Journal of Medicine* 2005;353:1209–23.
62 Bhattacharjee J and El-Sayeh H. Aripiprazole versus typical antipsychotic drugs for schizophrenia. *Cochrane Database of Systematic Reviews 2008*. 2010.
63 El-Sayeh H and Morganti C. Aripiprazole for schizophrenia. *Cochrane Database of Systematic Reviews 2006*. 2009.

CONFLICTS OF INTEREST

None.

ADDRESS FOR CORRESPONDENCE

Rachel Jenkins, WHO Collaborating Centre, Post Office Box, Institute of Psychiatry, King's College London, De Crespigny Park, London SE5 8AF, UK. Tel: +44 (0)20 7848 0668; fax: +44 (0)20 7848 5056; email: Rachel.Jenkins@kcl.ac.uk

Accepted May 2011