Panel S1: Genomics in global mental health

Large-scale collaborations in psychiatric genomics have increased statistical power for identifying genomic markers. However, the vast majority of DNA samples to date have derived from individuals of European ancestry even though the majority of the world's population is of Asian and African ancestry, and genetic diversity is particularly large in individuals with African ancestry. Our understanding of the genetic architecture of psychiatric disorders from a global perspective is therefore limited. The Human Heredity and Health in Africa (H3Africa) Initiative was initiated by the NIH and Wellcome Trust to facilitate a contemporary approach to the study of genomics and environmental determinants of common diseases and to improve the health of African populations. In collaboration with African clinician-scientists, the Broad Institute (USA) has developed a Neuropsychiatric Genetics in African Populations study (Neuro-GAP) to collect and analyse DNA from individuals with schizophrenia and bipolar disorder in a number of African countries. NeuroGAP aims to address a number of barriers to conducting research in Africa. First, contrary to the experience and perceptions that that HIC scientists conduct 'safari' research with minimal benefit to African scientists or their patients, NeuroGAP supports locally led research programs and capacity building efforts. Second, while most global mental health training programs pay for high-income country (HIC) scientists to go to Africa, Neuro-GAP supports African scientists to train in the U.S. and Africa. Third, by training the next generation of leaders needed to conduct large-scale neuropsychiatric genetics research at collaborating institutions, Neuro-GAP aims to create an infrastructure that will endure. Fourth, Neuro-GAP is addressing the complex ethical issues related to the collection, storage, analysis and sharing of genomic data through a collaborative approach.

Panel S2: Contemporary global challenges affecting mental health

Climate change: Global temperatures are predicted to rise over the 21st century under all carbon emission scenarios,[1] with increasing incidence of extreme weather events such as droughts and flooding. These include the effects of food and water insecurity and civil conflict on migration; increased physical illness through extreme heat exposure and water borne vectors; and fragmentation of social support systems and physical environments with particularly negative mental health consequences for vulnerable poor populations in low and middle-income countries (LMIC).[2,3]

Forced migration: Current civil conflicts have precipitated a migration crisis in many parts of the world, particularly in LMIC, which carry the highest burden of refugees. The adverse consequences of forced migration, including the precipitating events that lead to migration (such as exposure to war and conflict); the traumatic experience of migrating, particularly for children; and subsequent experiences of urbanization and acculturation in new living circumstances; are all determinants of poor mental health not only for those who are currently affected, but also for future generations.[4-6]

Income inequality: Income inequality has widened substantially in the last 30 years; the richest 1% of the world's population have as much wealth as the rest of the world combined.[7] Income inequality has been shown to have several adverse mental health consequences, although there is some heterogeneity in findings.[8] The incidence of schizophrenia is higher in more unequal societies,[9] and the prevalence of depression and substance abuse are higher in more unequal societies.[10,11] A number of potential mechanisms are implicated in the association between depression and inequality, namely psychological stress at the individual level; social comparison and erosion of social capital at the local community level; and neo-materialist processes at the national level.[11]

Panel S3: Mental Health Society of Ghana (MEHSOG)

The Mental Health Society of Ghana (MEHSOG) was formed in 2009, and emerged from community Self-Help Groups which included mental health and epilepsy service users and their families. It was established by BasicNeeds-Ghana and its partners and it has continued to be supported through a west African network of mental health coalitions under the Mental Health Leadership and Advocacy Program (mhLAP).[12] MEHSOG's structure reflects community, district, regional and national levels. It mobilises persons with mental health care needs to access treatment services, support their stabilised members into education, (self-) employment or gaining skills relevant for improving the quality of individual and family lives. It was instrumental in drafting and passing the 2012 Mental Health Law and continues to be the main "mouthpiece" on the needs and rights of persons with mental disorders or epilepsy in Ghana. Among MEHSOG's main advocacy campaigns include work with government and traditional authorities, and inclusion of persons with mental disorders or epilepsy and their primary carers in national social protection schemes, such as the National Health Insurance Scheme (NHIS), the district assembly disability common fund and the Livelihoods Empowerment Against Poverty (LEAP).

Panel S4: Scaling up lay health worker delivered psychological therapy for common mental disorders

The Friendship Bench programme is helping to address the treatment gap for common mental disorders in Zimbabwe by training lay health workers (known as community "grandmothers") to deliver structured problem-solving therapy. Sessions take place on a wooden bench at municipal public clinics over a 6-week period, and are complemented by an optional group support program. A 576 person trial showed that participants in the Friendship Bench were more than three times less likely to have symptoms of depression after six months, compared with those receiving standard care.[13,14] In 2016 the Friendship Bench partnered with municipal health authorities and Médecins Sans Frontières, to scale the model to 72 clinics in the cities of Harare, Gweru and Chitungwiza (pop 1.8 million), reaching over 27,500 people in the first year of implementation.[15]



A community health worker counsels a Friendship Bench program participant at a municipal health clinic in Zimbabwe.
Source: Personal communication with Prof Dixon Chibanda (Univ. of Zimbabwe)

Panel S5: Reducing the treatment gap for depression through increasing the demand for mental health care in rural India

The Vidarbha Stress and Health Program (VISHRAM) is a programme to address the risk factors for suicide in a rural community in Maharashtra, India. Community health workers and non-specialist counsellors work in collaboration with primary care physicians and psychiatrists to provide evidence based interventions for depression and alcohol use disorders. A key component is a multi-faceted intervention to enhance mental health literacy, promote self-care and counselling. in 2011, the programme was rolled out to 30 villages (approximate population of 100,000) in the Vidarbha region.[16] An 18 month evaluation of the programme demonstrated that VISHRAM was successful at increasing the proportion of people with depression who sought treatment six-fold.[17] Importantly, these improvements were experienced equally by members of the target communities regardless of sex, income level, caste or religion. Elements of this program are now being assessed for scaling up in other parts of the state through the District Mental Health Programme.



A community awareness session under the VISHRAM Programme in Wardha District, India

Panel S6: Thinking Healthy Programme: a community health worker delivered psychosocial intervention for improving maternal wellbeing

The Thinking Healthy Programme (THP) is a lay health worker delivered intervention for low resource settings that utilises cognitive and behavioural techniques to improve mental wellbeing, mother-infant interaction and maternal social support. The effectiveness of THP was established through a RCT in Rawalpindi, Pakistan: rates of perinatal depression in the women who received the intervention were halved, compared to those women who did not receive the intervention; these women had less disability and better overall social functioning and the effects were sustained into the first postnatal year.[18] The programme has been implemented successfully in other areas of Pakistan, and adopted by the World Health Organization's a mental health Gap Action Programme (mhGAP). THP has also been adapted for delivery in various ways – for example by using tablet-based technology to train lay health workers from afar, introduction of a peer-delivery model, and integration into universal maternal and child health programmes – thus enabling the program to be delivered at scale in a variety of challenging contexts.[19]



A Lay-worker delivering THP to a mother in rural Pakistan
Source: Personal Communication with Prof Atif Rahman (Univ. of Liverpool)

Panel S7: Improving Access to Psychological Therapies

Launched in 2008, the Improving Access to Psychological Therapies (IAPT) programme aims to increase public access to evidence based psychological therapies for depression and anxiety-related disorders in England by training therapists in NICE recommended psychological treatments and deploying them in specialised psychological therapy services. Cognitive behaviour therapy has the widest recommendation in NICE guidelines and is the most common therapy. However, counselling, inter-personal therapy, couples therapy and brief psychodynamic therapy are also supported for treating depression. A stepped care model provides low intensity therapies to individuals with mild to moderate symptoms, and more intensive therapy to those who do not respond to initial treatment or suffer more severe disorders. By 2017 IAPT services have been established in all local health regions (CCGs) and over 7,000 new therapists have been trained. Around 950,000 people are seen each year with approximately 60% (560,000 people) going on to have a course of treatment. Clinical outcome scores are available for 98% of treated patients. Recovery rates are in excess of 50% and 2 out of 3 people show significant improvement.

The outcomes achieved by each IAPT service are displayed on a public website (http://content.digital.nhs.uk/iaptreports). Building on this success, the National Health Service is also scaling up this service to children and young person's IAPT.

Panel S8: The Time to Change programme to reduce stigma and discrimination in England

Time to Change (TTC) was launched in 2009, and is England's biggest program to tackle stigma and discrimination against people with mental disorders.[20] TTC includes a social marketing campaign and both large-scale and locally-based initiatives aiming to bring together people with and without experience of mental disorders, including use of awareness raising methods such as posters in underground train stations. A series of studies since 2009 have measured the impact of the campaign in terms of knowledge (ignorance), attitudes (prejudice) and behaviour (discrimination), and have shown modest and progressive improvements over time including positive changes in all three domains of stigma.[21-23]



An advertisement in a London tube station helps to address myths about mental illness.
Source: Time to Change

Panel S9: Increasing the detection of mental disorders in the community

The Programme for Improving Mental health carE (PRIME) [24] in Nepal developed a structured and context sensitive approach (Community Informant Detection Tool [CIDT]) to proactive case-finding using pictorial vignettes designed to promote help seeking for mental health treatment in LMIC. Briefly trained community members can recognize people with mental health problems with 64% accuracy using this vignette-based detection tool. Among persons identified through community case detection using a structured vignette tool, 67% go on to access health services. In LMIC settings with limited treatment engagement, this approach can be added to service delivery models to increase utilization of mental health care.[25,26] The CIDT was used across all MHPSS programs during the 2015 earthquake in Nepal, and has been scaled up for use in two districts as part of the District Mental Health Plans. The NGO War Child is adapting the tool specifically for children in nine countries. The aim of the adapted CIDT for children is to increase the detection of children with severe emotional distress, behavioural problems or high-risk behaviours, in order to facilitate and optimize the match between children in need of support with child protection and psychosocial interventions being offered through the War Child programs.



Community members being trained in the CIDT method
Source: Transcultural Psychosocial Organization Nepal (TPO Nepal)

Panel S10: Parenting interventions for families of children with emotional and behavioural disorders

Triple P (Positive Parenting Program) is a parenting and family support system designed to equip parents with skills to prevent and manage behavioural and emotional problems in children and adolescents (up to 16 years). The program includes a suite of interventions of increasing intensity (levels 1-5) which are tailored to suit the specific needs of parents and children. These range from a tailored communications strategy to one-time assistance to multi-week modular sessions covering a range of topics. The program also offers a variety of delivery modalities, including individual face to face, group, telephone assisted and self-directed programs. Triple P has been shown to be effective at reducing behavioural and emotional problems in children, improving parental wellbeing and parenting skills, reducing stress and depression and slowing the rate of child abuse.[27-29] The flexible nature of this program has led to its widespread adoption in 25 countries worldwide, including the United States, Japan, Hong Kong, Switzerland, South Africa and, most recently, in Argentina.[30] Widespread implementation of Triple P is made possible by an international network of trainers and implementation consultants who support accreditation of practitioners and provide a sustainability framework to guide delivery in different contexts.

The Incredible Years (IY) is a set of three comprehensive, evidence-based programs for parents, teachers, and children that aims to reduce challenging behaviours in children under 12. IY programs work by addressing overlapping risk factors across settings known to be related to the development of conduct disorders in children. The programs have been shown to be effective in strengthening teacher and parent management skills, improving children's social emotional competence, emotional regulation, and school readiness, and reducing behaviour problems across a range of contexts.[31] These findings have been replicated in randomized studies by independent investigators with different ethnic populations, cultures and age. Initially implemented in the US, IY has been replicated in over a dozen countries using a standardized training and certification process to ensure model fidelity.[32]



Mothers take part in Triple P group session
Source: Personal Communication with Prof Matt Sanders (Univ. of Queensland)

Panel S11: HealthWise: building socio-emotional skills in adolescents

HealthWise is a comprehensive, risk-reduction life skills curriculum for adolescents in South Africa. The overall goals of the HealthWise curriculum are to reduce the transmission of HIV/AIDS and other STIs, reduce drug and alcohol abuse, and increase positive use and experience of free and leisure time. The curriculum consists of twelve lessons for Grade eight students, and six lessons for Grade nine students. Lessons cover topics typical to most social-emotional skills programs (e.g., anxiety and anger management, decision making, self-awareness) and also targets the positive use of free time.[33] An efficacy trial of nine schools demonstrated that HealthWise males and females experienced a smaller increase in recent cigarette and alcohol use, including heavy use of these substances, and increased perceived access to condoms.[34] There is a robust evidence base in support of similar life skills programs for promoting mental health in adolescents[35] and such programs are being scaled up in numerous countries. HealthWise itself is currently being replicated in Lusaka, Zambia.



Messages in the Mitchell's Plain community, South Africa, promote positive use of leisure time in line with the HealthWise program.
Source: Personal communication with Prof Linda Caldwell (Penn State Univ.)

Panel S12: The Going Off, Growing Strong resilience and suicide prevention programme in indigenous Canadians

Suicide is the leading cause of death for young indigenous Canadians. The Going Off, Growing Strong program was designed to build the resilience of a group of Inuit young people facing widespread social, cultural and environmental change in Nain, Nunatsiavut. The overarching goals of this program are to: enhance the mental, physical and spiritual health of a group of 'at-risk' youth; build social connections between the youth and other community members; and transmit environmental knowledge, skills and values from experienced harvesters to youth. The innovation consists of a community led program based on inter-generational healing through the transmission of Inuit skills such as hunting, fishing, gathering wood and wild plants, building Kamutiks (sleds for carrying supplies), fixing skidoos, making arts and crafts, and wild food, with the goals of building individual and collective resilience. Whereas there were seven suicides among adolescents and young men, and several of their peers made serious attempts at self-harm in 2011, during the first three years of the programme from 2012 onwards, there were no further suicides among school-aged young men.[36]



Participants from the first cohort of the Going off, Growing Strong program in Nunatsiavut, Canada.
Source: Mental Health Innovation Network[37]

Panel S13: Expanding youth mental health care in New Zealand

In 2012, the Prime Minister's Youth Mental Health Project (YMHP) was introduced with the aim of promoting the mental health and wellbeing of young people with or at risk of developing mental health problems. It consists of 26 initiatives across the Ministries of Health, Education, Social Development and Te Puni Kokiri (Public Service Department). These initiatives range from the expansion of primary mental health services for youth, to school based behavior modification programs, and online interactive games which deliver cognitive behavioural therapy. An independent evaluation at the end of four years found that the project has succeeded at providing 180,000 young people with access to mental health services and support (with marked increases among Pacific islander and Maori youth), reduced wait times for youth drug and alcohol abuse services, and decreased behavioural incidents in schools. There was also evidence of early improvements in health outcomes as a result of increased access to treatment and services, with long term health outcomes expected in coming years.[38] The project has also been found to deliver a societal benefit to cost ratio of at least 1·1 and resulted in 13,000 disability adjusted life years gained.[39] The New Zealand government is continuing to invest in the YMHP programming and to strengthen initiatives to reach more disadvantaged youth, including those identifying as LGBTQ or who experience disability.

Panel S14: HEADSPACE – Scaling up Stigma-Free enhanced primary care for young people aged 12-25 years across Australia

Background

- The transition to adulthood is the period during which most forms of adult mental ill-health emerge. Paradoxically, access, quality, and developmental appropriateness of mental health care is lowest than at any other stage of life.

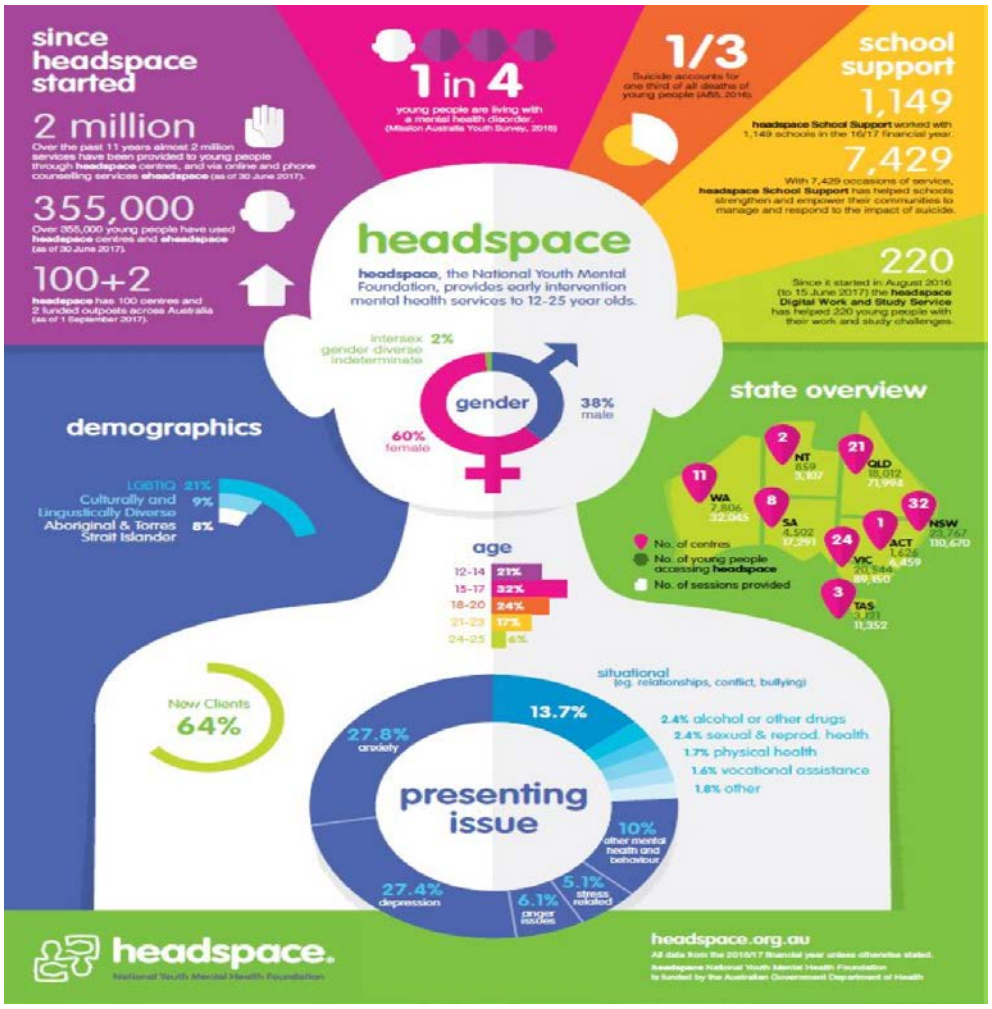
Foundations

- In Australia, early psychosis reforms during the 1990s successfully created services that bridged the gap between adolescent and young adult services to create a new culture of care that could engage young people. However, the scale of unmet need meant that a high throughput model was essential based on an enhanced primary care concept and as a "one-stop shop" to meet the main health, social and vocational needs of young people.
- Political advocacy from 2004 resulted in the Australian government funding 30 headspace centres, designed and commissioned by a consortium led by Orygen, including leading tertiary institutions and organisations.[40] A national organisation, headspace: the National Youth Mental Health Foundation was established to commission and support this reform initiative.
- Headspace centres are operated by local lead agencies supported by a consortium of relevant youth, health and social service providers.[40] Headspace offers physical and mental health care, drug and alcohol interventions, and vocational support. Through the national office, suicide postvention programs were provided nationally and online crisis and therapeutic support is available through eheadspace.[40]

National and International Upscaling

- Headspace has been scaled up in a series of waves with strong support from both sides of politics, local communities, young people and families, and the media.
- By late 2018, headspace will operate in 110 locations nationally. Strengthening of these centres has begun, providing community based care to more complex cases, notably early psychosis services in 6 regional centres.
- Over 350,000 young people have received headspace services and independent evaluations have shown improvements in access and satisfaction, self-harm and functional outcomes. However, since it is a primary care model, the approximately 40% of more complex cases who gain rapid access fail to improve. These patients need more specialised care, which remains in short supply.
- Headspace has succeeded in making stigma-free early intervention possible during the mild to moderate stage of illness and making more overt the level of unmet need for more specialised care.[41]
- This one-stop shop model has been emulated and evolved globally, notably in Ireland, Canada, Denmark, Israel, the Netherlands, UK and USA. In France, something similar, the network of "Maisons des Adolescents" developed independently during a similar period.

For more on headspace see www.headspace.org.au



Source: Headspace - The National Youth Mental Health Foundation. www.headspace.org.au

Panel S15: TEAMcare: a collaborative model for depression and co-morbid disorders

TEAMcare is a team-based, collaborative care model designed for the management of patients with depression, diabetes, and/or cardiovascular disease. Primary health care staff are trained to work in teams, delivering care in person and by phone using a treat-to-target approach. The teams include a care manager (typically a nurse), who acts as the liaison between the clinical consultation team, primary care provider and the patient. The TEAMcare model was first evaluated in a 214 person randomized controlled trial in 14 primary care clinics in Washington State, US. After 12 months, patients in the intervention group demonstrated improvements in symptoms of diabetes (glycated haemoglobin levels), heart disease (LDL cholesterol levels, systolic blood pressure) and depression, as compared to their counterparts in the control group which received standard primary care.[42] In addition, the TEAMcare intervention reduced total outpatient care costs by $594 USD as compared to usual care.[43] The TEAMcare model has subsequently been implemented in over 80 clinics across several US states, replicated in primary care settings in Alberta, Canada, adapted[44] for patients with schizophrenia, and is currently being used as part of the INDEPENDENT multi-component intervention trial for persons with depression, diabetes and cardiovascular disease at four sites in India.[45,46]

Panel S16: Universal mental health coverage in Peru

In 2013, Peru began nationwide healthcare reform, with the objective of improving the quality of mental health care and ensuring universal health coverage (UHC). The reform builds off of nearly a decade of policy and regulatory progress led by the Ministry of Health and consists of: i) strengthening role of primary health centres and hospitals in mental health care, through training health workers in detection and pharmacological treatment of persons with common mental disorders; ii) implementation of a network of community mental health centres (CMHCs) staffed by psychiatrists and other mental health specialists for persons with severe mental illness; iii) introduction of residential support, vocational training and rehabilitation centres to support reintegration into society; and iv) expansion of Seguro Integral de Salud (insurance coverage) to include mental health care. While implementation is still under way, a number of early milestones point to the progress of the program. Health care staff from the regions of Lima, Tumbes, Madre de Dios, and Loreto have received training in detection and pharmacological treatment of persons with common mental disorders, 26 CMHCs have opened in 6 districts, and insurance coverage for mental health has been extended to the poor. In addition, facilities are now required to devote 10% of their budget to mental health capacity building and to report on the percentage of patients screened for a mental health disorder.[47]



Community workers Inside the first Community Mental Health Center of the Carabayllo district, Lima, Peru
Source: Personal communication with Cayetano Heredia University (UPCH), Peru

Panel S17: Integrated HIV care for people with mental disorders in Rwanda

Ndera Neuropsychiatric Hospital delivers tertiary psychiatric and neurological care in Rwanda. In 2007, the hospital director expressed concern that people with HIV who were admitted to the inpatient units lost access to their HIV treatment. A needs assessment at Ndera identified training and knowledge gaps in HIV prevention, treatment and care among the staff. Organizational needs included new relationships with partners able to assist in providing HIV care and treatment resources in specialist mental health settings and incorporation of specialist mental health care providers into the Ministry of Health's existing HIV training activities. With support from international and national partners, Ndera set up a collaboration that enabled the facility to receive infrastructure needed to establish an HIV care and treatment service: HIV testing capabilities, a lab, and information technology to maintain patient data. The hospital clinicians established an HIV-mental health team that worked closely with ward nurses to determine how and where to integrate HIV education and pre- and post-test counselling into the flow of the inpatient unit activities. By late 2008, the team launched the new integrated services. The hospital implemented protocols for counselling and testing, as well as antiretroviral therapy initiation and maintenance. The HIV/mental health service also enabled people with HIV who were discharged from the hospital to coordinate their follow-up mental health and HIV care at Ndera.[48]

Panel S18: Clubhouse: Improving mental health through community building

Clubhouses provide opportunities for persons living with severe mental illness to participate in housing, employment, education and health and wellness initiatives that renew and reconnect them with mainstream society. Members play an active role in their own recovery and that of their peers by working alongside staff to organize and run programs. Founded in New York City in 1948 with the establishment of Fountain House (the first Clubhouse), the Clubhouse model has proven effective at improving wellbeing and physical and mental health, employment rates, and reducing re-hospitalization, and incarceration among individuals living with mental illness.[49-52] The model is also cost-effective, with one year of programming costing the equivalent of two weeks of hospitalization in a psychiatric hospital in the US.[53] Clubhouse international is having an impact at an international scale. To date, there are 320 accredited Clubhouse programs in 34 countries which reach more than 100,000 people per year.



Members of the Fountain House in New York
Source: Personal communication with Mr Joel D. Corcoran (Clubhouse International)

Panel S19: IMPACT - Improving access to care for late-life depression

Improving Mood – Promoting Access to Collaborative Care for Late Life Depression (IMPACT) is a collaborative care program that provides the elderly with access to anti-depressants and brief psychological therapy. Central to the model are Depression Clinical Specialists, behavioural professionals such as psychologists and psychiatric nurses who are trained to coordinate this multi-component intervention. From 1999-2001 the programme was evaluated via a randomised controlled trial of 1,801 people at eighteen primary care clinics across five US states. After 12 months, 45% of patients receiving the IMPACT programme had achieved a 50% or more reduction in depressive symptoms as compared to 19% of those receiving treatment as usual.[54] A long-term cost analysis for IMPACT showed $3,300 US savings in overall healthcare costs over a 4-year follow-up period of elderly patients.[55] IMPACT has since been integrated into state wide mental health programs in Minnesota and Washington, and adapted for persons with co-morbid physical disorders such as diabetes, cancer and heart disease[56]

Panel S20: The Kintun program for families with dementia[57]

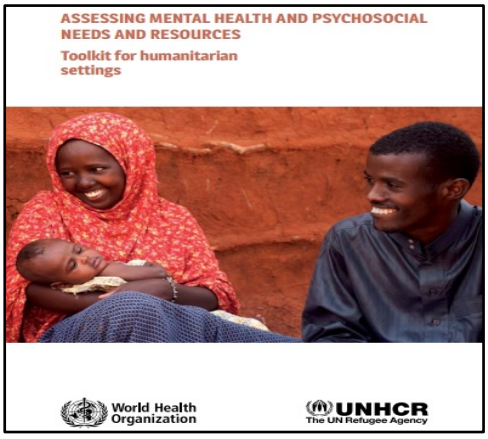
The Kintun Program in Chile is a multi-component intervention that aims to enhance participation of persons with dementia in day to day activities, provide respite for caregivers and improve the quality of home based care. Following a full medical assessment, participants are invited to participate in a range of daily activities such as city walks, gardening and museum visits. The multi-disciplinary team also provides referrals to specialists, home visits, training for caregivers as well as counselling and community education services. A quasi-experimental evaluation of the program found it to be effective at improving neuro-psychiatric behaviours, reducing fall risk and maintaining cognition and activities of daily living. Initially implemented in the Municipality of Penalolen in Santiago, Kintun received funding from the Chilean Ministry of Health in 2015 and nine new centres are being implemented throughout the country.



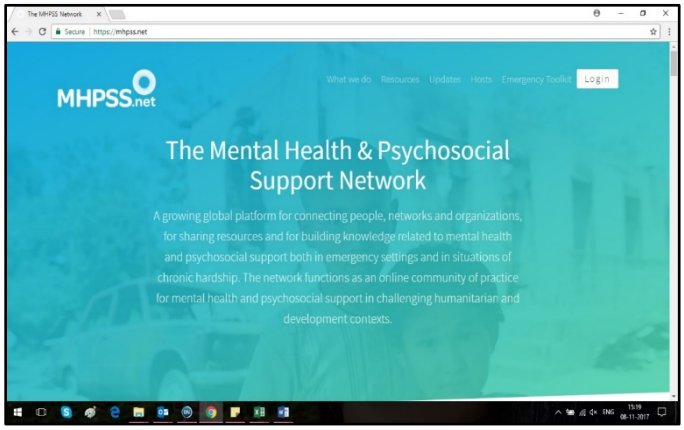
Kintun program participants in Chile in a group activity aimed at improving cognitive functioning, physical abilities and social interaction.

Source: Personal communication with Prof Jean Gajardo Jauregui (Univ. of Chile)

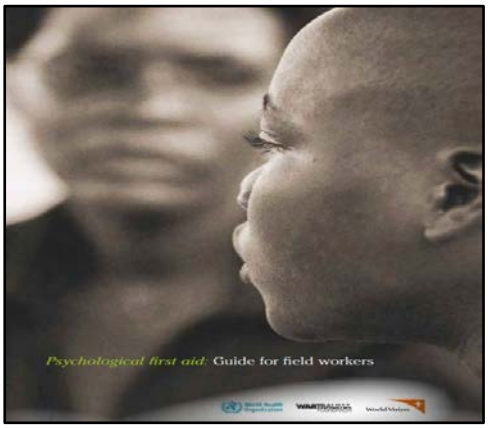
Panel S21: A collection of inter-agency resources for mental health and psychosocial support in humanitarian settings.



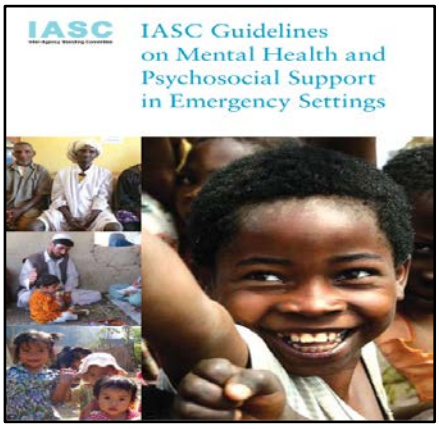
Assessing mental health and psychosocial needs and resources. A toolkit for humanitarian settings (WHO, UNHCR; 2012)



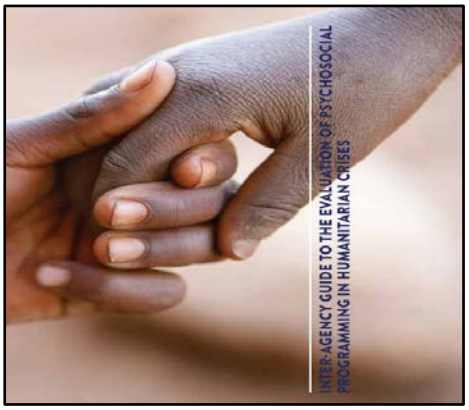
www.mhpss.net - A network that functions as an online community of practice for mental health and psychosocial support in challenging humanitarian and development contexts.



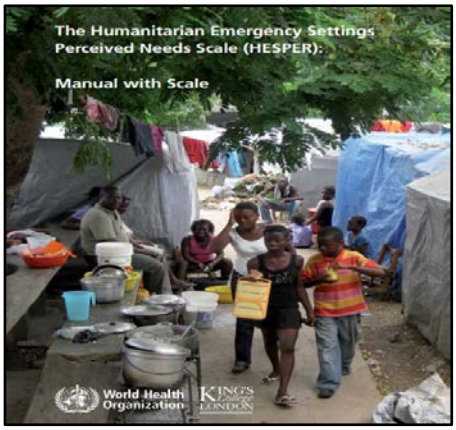
Psychological First Aid. A guide for field workers (WHO, War Trauma Foundation, World Vision International; 2011)



IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings (IASC; 2007)



Inter-agency Guide to Evaluation of Psychosocial Programming in Humanitarian Crises (UNICEF; 2011)



The Humanitarian Emergency Settings Perceived Needs Scale (HESPER) (WHO, King's College London; 2011)

Panel S22: Building a primary mental health care system in post-disaster Aceh

The province of Aceh in Indonesia was the centre of a thirty-year armed conflict between government forces and rebel groups. Just prior to the signing of the peace accord in 2005, the island province was struck by a devastating tsunami which left 165,000 dead and 400,000 displaced. Shortly after, more than 100 NGOs arrived offering mental health services. The NGO presence helped to raise awareness about mental health needs and provide short term services to supplement the limited care available through the public tertiary system. However, it was clear that a long-term solution to sustaining mental health care was needed. The Ministry of Health, in collaboration with the WHO, used the opportunity to integrate community based mental health services in the primary health care system. At the centre of these services were community mental health nurses who provide home visits, ensure patients received appropriate medication and support to families. Reforms were also undertaken at the Banda Aceh mental hospital in order to transform it into a specialist care centre, while two other inpatient facilities were added to provide greater coverage of specialist services. As a result of these reforms, eleven districts in the province acquired some level of capacity to deliver mental health services at the primary care level, and many created specific mental health budgets. At the policy level, mental health was also included in Provincial Regulations on health. While ongoing efforts are needed to improve quality of care and add additional treatment units, Aceh stands as an important example of how to implement a community based mental health services following a time of crisis.[58,59]



Mental health nurse trainees use motorcycles to make home visits in Aceh Barat
Source: Building Back Better, World Health Organization[59]

Panel S23: Case Study - Improving quality of care in mental hospitals using a human rights approach

QualityRights Gujarat aims to improve quality of care and treatment at six public mental health facilities in Gujarat, India. Using WHO's QualityRights Tool Kit and capacity building tools that promote human rights and establish new standards of care, the project upgraded and improved the environment in the facilities, with existing resources; trained health workers, service users and families on human rights, the recovery approach to care, alternatives to seclusion and restraint and communication skills; established peer and family support programmes delivered by non-specialists such as the Peer Support Volunteers (PSVs); and introduced facility-level policy and mechanisms to govern practices to protect against inhumane, degrading treatment, violence and abuse (including the use of restraints).[60] The PSVs, made up of persons with lived experience of mental disorders, assist others in actively engaging in their own recovery, and work in mental health facilities in India. The Government of Gujarat is funding expansion of the project to additional facilities and to increase the pool of PSV, and jointly implements quality accreditation processes using the Toolkit for all public mental health facilities in the State.[61]



QualityRights Gujarat empowers service users to understand and realize their rights and to take an active role their own recovery.

Source: Indian Law Society's Centre for Mental Health Law & Policy[62]

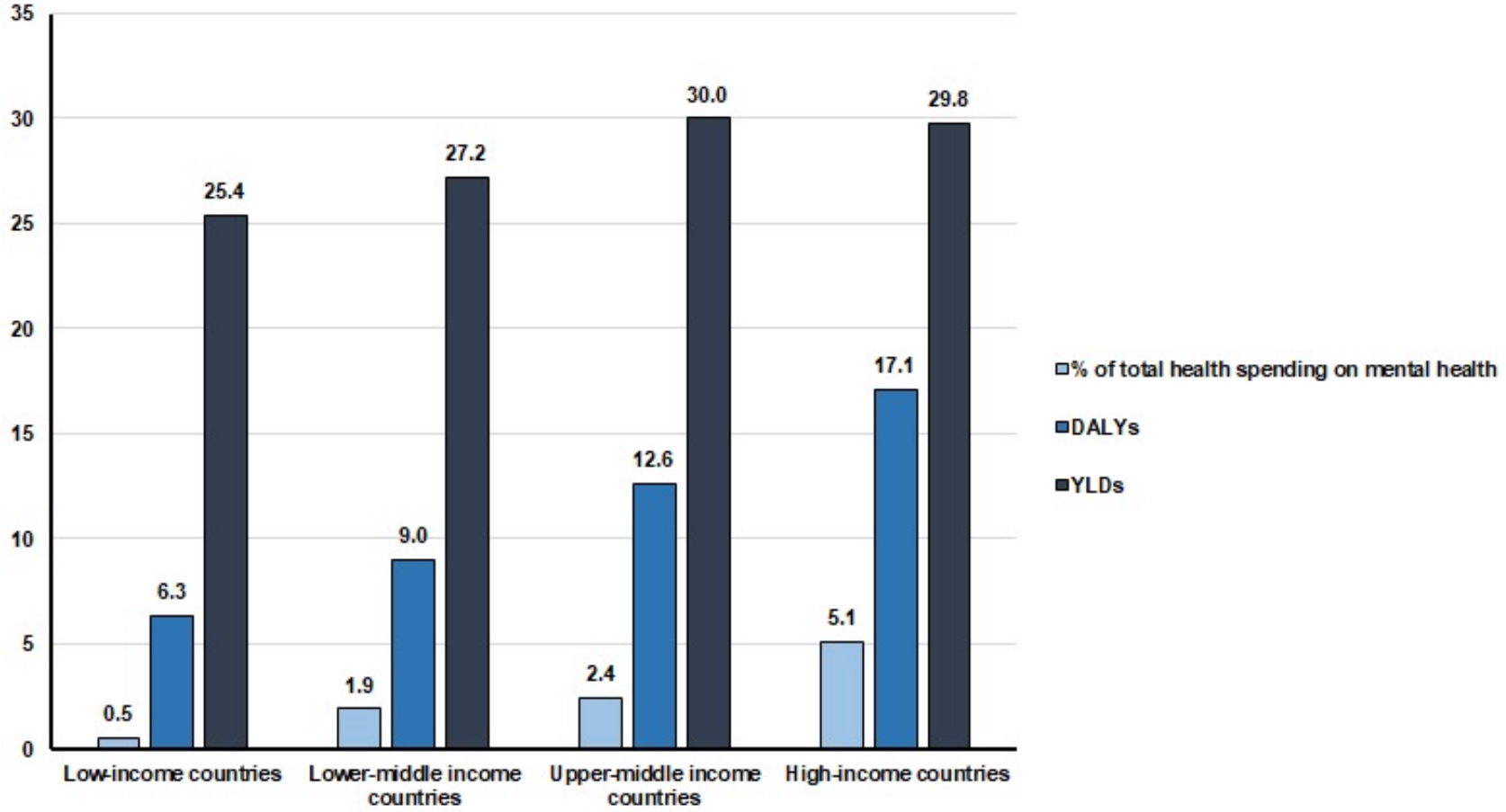
Panel S24: The Banyan: alternative housing for homeless women with mental disorders

In India, homeless people with mental illness are a marginalized group with no established policies or legislative procedures to support their care. The Banyan's Home Again program[63] provides choice-based, inclusive shared housing for individuals with persistent mental health issues, as an alternative to long-term institutionalization. Housing is shared by a group rather than individually occupied and located in a general community setting, thus offering an opportunity for social inclusion. Recovery oriented care is provided onsite by personal assistants who ensure an ongoing connection to the health system. Findings from a pilot trial of the Home Again model demonstrate increases in community functioning and integration and decreases in measures of disability among 50 women living in shared housing in Tamil Nadu over a period of 6 months.[64] Ethnographic observations also highlighted a growing sense of independence and interdependence within and outside of the home. The program has since been scaled up to 36 homes across the states of Tamil Nadu, Kerala and Assam in collaboration with local NGOs and government partners.



Participants preparing a meal in The Banyan's Home Again model in their shared kitchen in Kerala, India
Source: Personal communication with The Banyan, India

Figure S1: Percentage of total health spending on mental health compared to the burden of disease (DALYs and YLDs) for all mental health problems, by country income level.



Source: Global Burden of Disease Study

Figure S2: Shared determinants, interactions and actions required related to long term mental and physical conditions

Determinants	Interactions	Actions required

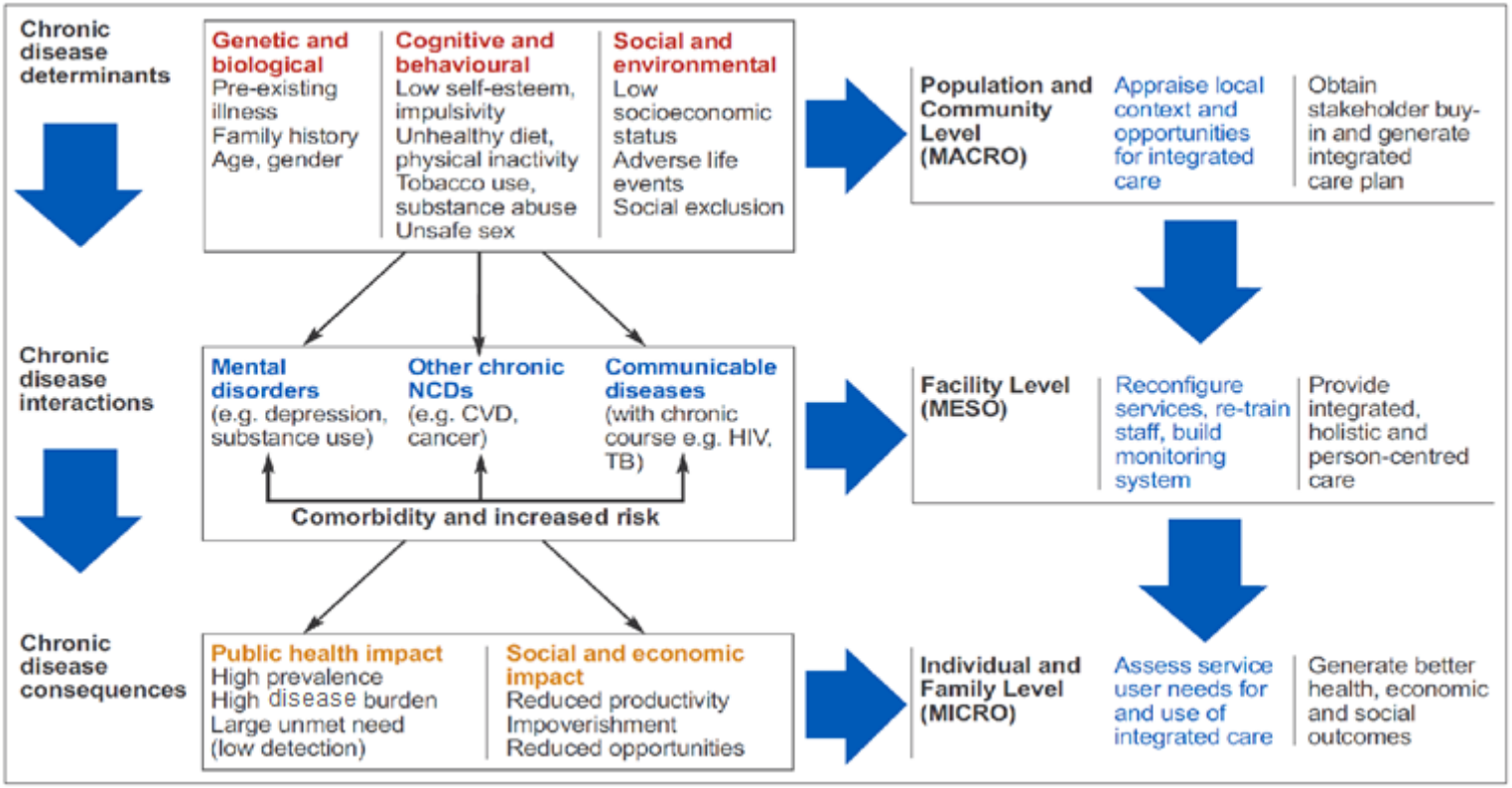


Table S1: Human rights instruments relevant for Global Mental Health

Human rights instruments	Year of Ratification	Brief Overview	Relevance for mental health	Number of countries ratified
Universal Declaration of Human Rights (UDHR)	1948	Includes a comprehensive range of civil, cultural, economic, political and social rights in a single international human rights instrument.[65]	Provides protection for the fundamental human rights that have a bearing on the mental health of populations.	Originally adopted by 48 countries
Convention on the Rights of Persons with Disabilities (CRPD)	2007	Promotes, protects and ensures the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and promotes respect for their inherent dignity.[66]	Provides specific protection for the rights of persons with disabilities, including those with psychosocial disabilities.	174
Convention on the Rights of the Child (CRC)	1989	Reaffirms the inherent dignity and equal and inalienable rights of all members of the human family as the foundation of freedom, justice and peace.[67] In the context of Juvenile justice, those who commit crimes should be treated in a manner consistent with the promotion of the child's sense of dignity and worth.	Promotes social progress and better standards of life of the child, whilst emphasising the mental health and wellbeing of the child.	194
International Covenant on Economic, Social and Cultural Rights (CESCR)	1966	Promotes and protects a wide range of fundamental, economic, social and cultural rights. [68]	Notes that forced displacement or eviction resulting from the denial of economic, social and cultural rights can lead to homelessness, the loss of livelihood and the destruction of social networks, with devastating psychological and health impacts.	164
Convention against Torture and Cruel, Inhuman or Degrading Treatment or Punishment (CAT)	1984	Affirms that no one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.[69]	Given the wide ranging scientific evidence of the damaging consequences of torture for mental health, this convention provides essential protection against torture and its devastating consequences for the mental health of victims.	161
Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW)	1979	Explicitly acknowledges that "extensive discrimination against women continues to exist", and emphasizes that such discrimination "violates the principles of equality of rights and respect for human dignity" of women.[70]	Provides protection against discrimination against women and therefore addresses specific risks associated with mental disorders for women.	189
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)	2007	The declaration establishes a universal framework of minimum standards for the survival, dignity and well-	Provides protection for the rights of indigenous peoples, specifically against factors which	148 (144 originally, Australia, Canada, US,

		being of the indigenous peoples of the world and it elaborates on existing human rights standards and fundamental freedoms as they apply to the specific situation of indigenous peoples.[71]	have been shown to lead to adverse mental health consequences in indigenous populations. Mental health is referred to twice explicitly: in Article 17 on the protection of indigenous children from exploitation and Article 24 on the rights of indigenous peoples to equal standards of physical and mental health.	and New Zealand subsequently ratified)
Declaration on the Rights of Indigenous Peoples, 2007	2007	The Declaration establishes a universal framework of minimum standards for the survival, dignity, well-being and rights of the world's indigenous peoples.[71]	The Declaration addresses both individual and collective rights; cultural rights and identity; rights to education, health and employment, which are important social determinants of mental health. Article 7.1. states: Indigenous individuals have the rights to life, physical and mental integrity, liberty and security of person.	Adopted by a majority of 143 states at the General Assembly of the UN
Special Rapporteur on the Human Rights of Migrants	1999	The main function of the Special Rapporteur are to protect and promote the human rights of migrants, recognizing the particular vulnerability of women, children and those undocumented or in an irregular situation.	Given the vulnerability of migrants' mental health, the Special Rapporteur plays an important role in protecting migrants from the adverse mental health consequences of their situations.	Special Rapporteur has been extended by Commission on Human Rights resolutions 2002/62 and 2005/47 and Human Rights Council resolutions 8/10, 17/12, 26/19, and 34/21
Basic Principles for the treatment of prisoners	1990	All prisoners shall be treated with the respect due to their inherent dignity and value as human beings.	Important for the high proportion of prisoners living with mental illness, and the evidence for the adverse mental health consequences of violent and degrading experiences of prisoners.	Adopted and proclaimed by General Assembly resolution 45/111 of 14 December 1990

Table S2: Benefits of delivering mental health care within integrated care

Domain	Intended benefit	Means of delivery
Financing	• Clearer, dedicated resources for services for people with mental disorders co-morbid with chronic conditions	• Better co-ordinated donor funding with recognition of co-morbidity implications (eg HIV/AIDS treatment targets) • Increased provision of social insurance • Inclusion of mental health treatment within the basic health package
Health service leadership and governance	• Improve health care decision making by policy makers and planners • Improve accountability of senior and middle managers of their impact on services	• Provide feasible methods to assess health policy objectives related to co-ordination, implementation, numbers of staff, capability of managerial staff, locally applicable policies, integrated donor support, and extent of cross-ministerial working • Sharing investment in health care delivery staff (eg primary care nurses treating people with long term physical and mental disorders) • Provide effective oversight, coalition building, regulation, and accountability.
Health technologies	• To ensure equitable access to essential, cost-effective medical products and technologies	• Delivery of essential psychotropic medications, psychosocial interventions and other technologies for prevention and treatment of mental disorders
Human resources	• More staff trained to identify and offer first line treatment for people with mental illnesses • Greater proportion of people with mental illnesses receive treatment (reduced treatment gap) • Training in line with best relevant evidence • More people receiving care for mental illness receive guideline concordant treatment (reduced effectiveness gap) • Less staff burnout and increased staff retention	• Train generic primary care and community services staff in evidence based treatment (eg WHO mhGAP Intervention Guide) • Train more senior staff to provide ongoing supervision and support • Provide change management support to middle managers • Feedback of positive patient outcomes reduces improves staff morale and reduces staff turnover
Information systems	• Staff better supported with relevant information at point of contact with patients • Allow service monitoring and quality improvement	• Make essential clinical information available to primary and community care staff at point of contact • Make these data available to health service managers and planners to allow appraisal of system performance via monitoring of health service targets/indicators
Service delivery	• Better quality continuing care for people with chronic conditions • Better informed patients and family members • More active participation of patients and family members in treatment decisions • Better integrated care for co-morbid and multi-morbid conditions	• Create primary care teams dedicated to continuing care for people with chronic conditions with clearly defined case manager roles • Organized approach to offering information to patient and family members about chronic conditions • Staff acceptance of shared care model • Promotion of self-management methods • Use of methods of continuous quality improvement

Source: *Adapted from: World Health Organisation. Everybody's business: strengthening health systems to improve health outcomes. Geneva: World Health Organization; 2007.*

Table S3: Potential links between priorities of 15 large international foundations and mental health (based on endowment size)

Foundation	Total endowment (USD billions)	Priorities	Examples of links with mental health
Bill and Melinda Gates Foundation	40.3[72]	- Immunization - Mother, adolescent and child health - HIV, Tuberculosis, Malaria - Education - Poverty alleviation - Basic health care	• Bidirectional relationship between mental health and mother, adolescent and child health, HIV, TB, malaria, education and poverty • Integration of mental health within basic health care package
Open Society Foundations	30[73]	- Human Rights - Education - Public Health	• Protection of Human Rights for mental wellbeing • People with mental disorders in criminal justice system • Links between education and public health actions with better mental health outcomes
Wellcome Trust	27.6 (commitment to spend £1 billion every year for 5 years)[74]	Biomedical science including neuroscience, population health, humanities and social science, and product development and applied research. Priority areas in planetary health, vaccines and drug resistance infections. Currently exploring whether youth mental health should be a new priority area.	• Understanding how the brain works and how mental disorders develop in populations. • Finding causes and new interventions for mental disorders. • Finding better ways to deliver prevention and treatment interventions • Applications of research into policy and practice. • Developing tools and strategies to work with young people to promote mental health across the life course
IKEA Foundation	12.07 [75]	- Home/shelters - Health - Education - Sustainable family income (especially women)	• Links between mental health and development interventions targeting education and economic progress (especially to women)
Ford Foundation	12[76]	- Technology for the Public Interest - Quality Work and Economic Security - Pathways for Youth Success Women empowerment programs	• Technology interventions for mental health • Promoting youth mental health • Suicide prevention and other mental health issues among women.
Lilly Endowment, Inc.	10.07 [77]	- Community Development - Education - Focus on youth	• Links between community development and education with youth mental health
Azim Premji Foundation	9.8[78]	- Primary education	• Links between education and mental health, for example

			early identification and educational support to children with developmental delays and disabilities
William and Flora Hewlett Foundation	9[79]	- Education - Environment - Reproductive health	• Links between education and mental health • Links between environmental threats and mental health • Mental health of mothers and children
W K Kellogg Foundation (grants only in US, Mexico and Haiti)	8.72 [80]	- Education & Learning - Food - Health & Well-Being - Family Economic Security - Racial Equity & Healing - Child development	• Links between education, child development and mental health. • Economic security and mental health.
Li Ka Shing Foundation	8.3 [81]	- Education and health	• Links between education and mental health
MasterCard Foundation	7.1[82]	-Education - youth - livelihoods financial inclusion	• Links between education and mental health • Livelihood and economic stability for overall physical and mental health
The David & Lucile Packard Foundation	6.8 [83]	- Climate solutions - Population & reproductive health	• Links between environmental threats and mental health • Mother and child mental health
MacArthur Foundation	6.47 [84]	- Climate solutions - Criminal justice	• Links between environmental threats and mental health • Protection of Human Rights for mental wellbeing • People with mental disorders in criminal justice system
Gordon & Betty Moore Foundation	6.45[85]	- Environmental conservation - Patient care	• Links between environmental threats and mental health • Integration of mental health with care for physical health problems
The Leona M. and Harry B. Helmsley Charitable Trust	5.54 [86]	- Rural healthcare - Vulnerable children in Sub-Saharan Africa (education, improved food and nutrition, and clean water and sanitation, neglected tropical diseases)	• Child development among vulnerable populations • Mental health of people with neglected tropical diseases • Integration of mental health with basic rural healthcare package

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