SHEFFIELD

WORLD HEALTH ORGANIZATION SIMULATION

SheffWHO

2019 THEME GUIDE

Non-Communicable Diseases:

| A Crisis in Slow Motion |

Contents

1. Acknowledgements
2. About SheffWHO
3. Delegate Roles
4. Theme Guide

3.1 What are Non-Communicable Diseases? 4

3.2 Commercial Determinants of Health 5

3.3 Social Inequalities and NCDs 10

3.4 Healthcare system strengthening 13

3.5 Mental Health and Dementia 17

5. About the Cathedral Archer Project 20

Acknowledgements

The SheffWHO team would like to extend special thanks to our sponsors. We would like to particularly recognize the University of Sheffield School of Health and Related Research (ScHARR) for their stalwart support and commitment to SheffWHO 2019. We would also like to recognize the University of Sheffield Alumni Foundation for their generous sponsorship. Of special mention is Dr. Julie Balen who we would like to express deep gratitude to for her continued support and guidance of this simulation from its inception in 2018 to present.

We would also like to extend our deepest gratitude to our amazing Sub-theme Team members who were directly involved in the development of this document: Neeve McGinty, Ruby Shrestha, Arturo De Vecchi, Sikananu Amukena, Maria Kafira, Nefti Bempong and Kaodi McGaw. Your hard work and commitment to completing this document is greatly appreciated!

We would like to recognize the Cathedral Archer Project, a charity based in Sheffield City Centre which helps homeless people achieve a better life through supporting them to develop their independence, improve their ability to tackle setbacks, identify and change negative behaviour and improve their wellbeing. The Cathedral Archer Project will be partnering with SheffWHO to provide conference photographers. More information on the Cathedral Archer project is available on page 20.

Lastly, we would like to thank you, the delegates for being a part of SheffWHO 2019. We look forward to an interesting and exciting conference centred around addressing the issue of Non-Communicable diseases.

Regards,

SheffWHO Team 2019

The University Of Sheffield.

ScHARR

The University Of Sheffield.

The Alumni Foundation.

Cathedral Archer Project

SheffWHO

About SheffWHO

Model WHO events are educational simulations whereby participants recreate the process of the annual World Health Assembly (WHA) as held at the World Health Organization (WHO) Headquarters in Geneva. The WHA is the decision-making organ of the WHO, in which delegations from all WHO Member States attend and direct attention to a specific health agenda that has been formulated by the Executive Board.

The WHA does not, however, only focus on this specific health agenda. It also takes on the following functions: determining the organization's politics; supervising the financial policies; reviewing and approving programme budgets that have been proposed; and appointing the Director-General to the WHO. Here at SheffWHO, we will be offering students, alumni and professionals from all disciplines the opportunity to convene and engage with an important global health topic, embracing the role of delegates of the WHA.

The second of its kind in the Steel City, SheffWHO 2019 will explore the theme "Non-Communicable Diseases: A Crisis in Slow Motion" from March 8th-10th, 2019. Delegates attending will represent a variety of roles: WHO Member States (or countries), non-governmental organizations (NGOs), pharmaceutical companies and the media. Throughout this event, delegates will discuss, co-operate, and negotiate with other stakeholders in order to produce resolution papers that address the simulation theme.

This simulation aims to address important questions across the weekend. Delegates can explore these questions over the course of the SheffWHO event, concluding with the development and approval of resolution papers with how to address this topic.

Our aim is to transfer approved resolutions to WHO Headquarters to demonstrate the creative capacity of the next generation of global health leaders.

(For more information about the WHO and WHA, visit: www.who.int/about)

Delegate Roles

As part of the simulation, all participants are assigned to one of four delegate positions. This is designed to reflect the World Health Assembly, which is attended not only by WHO Member States, but also by a range of stakeholders. To ensure that you get the most out of the experience, it is important to review and familiarise yourself with the different roles. Regardless of the role that you have been assigned, all participants will gain a better understanding of the operation and policy-making of the WHO. Critical thinking, problem-solving and negotiation skills will be required for, and developed through all roles. There are four main roles:

Member State Representatives (WHO Ambassadors)

The role of a Member State (WHO Ambassador) is to represent your country's interests throughout the simulation, especially during regional blocs and plenary.

1. Member States collaborate with other Member States to form alliances and write collaborative resolution papers.

2. You will negotiate with Non-Governmental Organisations (NGOs) to obtain stamps of approval to gain more attention for your resolution paper.

3.Member States collaborate with pharmaceutical companies in order to receive funding (stamp of approval) to implement the global health policies of your resolution paper.

4. You will debate and defend specific global health issues in debate, in attempt to have your resolution paper adopted.

Non-Governmental Organisation Representatives (NGOs)

NGO Representatives represent the interests of their organisation and work with Member States (WHO Ambassadors) to approve draft resolutions. NGOs will be engaged by Media Representatives (Journalists) to help promote (or discourage) support for resolutions or policy position papers.

1. NGOs discuss potential partnerships with regional blocs and can then provide three stamps of approval.

2. You will then negotiate with Member States (WHO Ambassadors) to create policies that concern your goals in their draft resolution. You can leverage with your stamps of approval.

Pharmaceutical Representatives

Pharmaceutical companies are important in global health care as they manage, research and develop life-saving medications and vaccinations.

1. Representatives collaborate with ambassadors to provide their (two) stamps of approval whilst advancing their company's interests.

2. You will influence draft resolutions to represent your objectives and leverage policies to protect your interests.

Media Representatives (Journalists)

The media will report the events throughout the simulations and shape delegate's global awareness. They work from different angles.

1. You will move between different regional blocs and use diverse modes of communication.

2. You will also interview delegates about different issues and recent developments. The media can also plant news stories and create rumours.

Let us know if you have any further questions about your role! We will always be happy to clarify anything as needed

| Theme Guide |

What are NON-COMMUNICABLE DISEASES?

Non-communicable diseases, often referred to as 'lifestyle diseases' are those which progress slowly over a long period of time and cannot be passed from one individual to another like communicable diseases.

They include cardiovascular disease, cancer, obesity, diabetes, mental health illnesses, dementia, road traffic or violent injuries and respiratory diseases.

Commercial Determinants of Health

Whether it is marketing fast food, sodas, alcohol or cigarettes, corporations use a number of strategies to endorse products and choices that are detrimental to health. These strategies are known collectively as the commercial determinants of health (CDH) (2). The four main examples of CDH are:

- Marketing of unhealthy products to enhance their desirability and acceptability
- Lobbying to impede policy barriers like the introduction of a minimum drinking ages
- Using 'corporate social responsibility' strategies to deflect attention and whitewash tarnished reputations
- Creating extensive supply chains, which amplify company influence around the globe (2).

Health, but at what cost?

The sale of unhealthy products like cigarettes, alcohol, processed foods and beverages is a major contributor to the current NCD epidemic sweeping the globe. Not only that, but public health efforts to control businesses that promote unhealthy products face enormous opposition from large and powerful profit-driven corporations. WHO Director-General Margaret Chan recognized that, "efforts to prevent noncommunicable diseases go against the business interests of powerful economic operators" (2). For context, the combined market capitalisation of the five largest tobacco corporations is more than US$400 billion and for the five largest beverage firms, $600 billion, the latter exceeding the GDP of all but the world's 20 richest countries (1).

The annual profits of tobacco industry exceed US$35 billion and in the USA alone, profits like these would not exist without the US$8.9 billion on marketing in 2013 (1). In contrast, the annual budget of WHO is approximately US$2.2 billion (1). Therefore, the profits at stake for companies may be immense, especially when compared to the available public budget to implement health protection and promotion policies (1).

"Efforts to prevent non-communicable diseases go against the business interests of powerful economic operators"

- Margaret Chan,
WHO Director-General

Obesity

Commercial determinants of health have certainly played a role in the increase in obesity in recent decades. According to the WHO, overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health [3]. During 2016, more than 1.9 billion adults were overweight and among them, over 650 million adults were obese [3]. 39% of adults aged 18 years and over were overweight [3]. Overall, about 13% of the world's adult population were obese in 2016 [3].

The prevalence globally of these conditions tripled between 1975 and 2016[3]. Likewise, the prevalence of overweight/ obesity among children and adolescents has risen dramatically from just 4% in 1975 to over 18% in 2016. Similarly, the rise has occurred among both boys and girls: in 2016 18% of girls and 19% of boys were overweight. The most common cause of obesity and overweight is a misbalance between calories consumed and calories used. Around the world, there has been an increased intake of foods that are high in fat; and an increase in physical inactivity due to the creation of sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization [3].

Furthermore, changes in dietary and physical activity patterns are often the result of environmental and societal changes associated with development and lack of supportive policies in sectors such as health, agriculture, transport, urban planning, environment, food processing, distribution, marketing, and education [3]. The body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. An elevated BMI is an important risk factor for noncommunicable diseases such as cardiovascular diseases, which is one of the leading causes of death, diabetes, musculoskeletal disorders and some cancers. The risk for these noncommunicable diseases increases when the BMI increases [3].

Many low- and middle-income countries are still dealing with the problems of infectious diseases and undernutrition as well as experiencing a rapid upsurge in noncommunicable disease risk factors such as obesity and overweight, particularly in urban settings [3]. Overweight and obesity, as well as their related noncommunicable diseases, are largely preventable. Supportive environments and communities are fundamental in shaping people's choices. By making healthier foods and regular physical activity more accessible, available and affordable, it could encourage people to make the right choices. Also, it is important to implement public health policies (e.g. Tax increasing, label advisories)

Case Study 1 - Happy 10 Minutes Campaign (5)

Happy 10 Minutes was a campaign run by the Chinese government that encouraged schoolchildren to exercise 10 minutes a day. The initiative was notable for its attempt to get children to be more active but it was also notable for what it did not mention: cutting down on unhealthy foods and sugary beverages.

It seemed like a laudable intervention, until it was revealed in the BMJ and The Journal of Public Health Policy that the campaign was largely the handiwork of Coca-Cola and other Western food and beverage giants operating through a group called the International life sciences institute. Their purpose was to effectively promote a message that exercise, not dieting, was the solution to the nation's obesity crisis and preserve industry profits, effectively valuing wealth over population health.

to regulate the use and consumption of energy-dense food that are high in fat, and therefore preventing overweight and obesity [3].

Diabetes

Diabetes Mellitus is defined as a chronic disease estimated to affect 451 million of the global adult population in 2017 [4]. There are three main types: a) type I diabetes (or insulin-dependent diabetes), which results from an insufficient production of insulin by the pancreas; b) type II diabetes (or non-insulin dependent diabetes), characterized by insulin resistance and c) gestational diabetes, concerning elevated levels of blood glucose first observed during pregnancy [6,7]. Type I diabetes is not linked to modifiable lifestyle factors unlike Type II diabetes [8].

Type II diabetes is recognized as one of the primary global causes of disability, greatly aligned with the presence of various comorbidities, such as cardiovascular or renal disease [9]. Having complications of diabetes can increase medical costs by up to 150%, compared to a type II diabetic whose treatment solely includes pharmacological or dietary approaches [10]. Diabetes will present a global economic burden of up to 2.1. trillion dollars in 2030 [11].

The disease onset is frequently associated with sedentary lifestyle, obesity and high carbohydrate consumption [9]. It is proven that people presenting with the disease have largely refrained from the goal of 150 minutes of moderate-to-intense physical activity per week [12], while it is also estimated that 85% of people with the condition are either overweight or obese [13]. Moreover, the consumption of sweetened beverages may increase the disease's incidence up to 18% per serving/day [12]. Urbanization and modern trade liberalization have had a significant impact on the global food industry and, by extension, on nutritional trends and nutrition-related noncommunicable diseases [14,15]. Increasing availability and accessibility of sugary products and sweeteners in urban areas, for example, has led to their increased consumption, enabling food markets to further promote them [15]. It is worth mentioning access to markets, as well as health care resources and community infrastructure have also been held accountable for the extensive magnitude of the disease during the last decades [16].

Case Study 2- Corporate Influence on Health: The tobacco industry (17, 18)

The tobacco industry, compared to all other industries, has accrued the most blemishes on their record for promoting unhealthy lifestyle choices. After a series of internal leaks followed by litigation, a series of internal documents have become privy to the public. These revealed that senior managers: lied about how addictive tobacco products are, intentionally targeted young children as "new product markets", purposefully increased the addictiveness of their products and worked to restrain policies which aim to limit tobacco use. Tobacco companies also have been found to seek access to influence policymakers. In a particularly troubling example from 2017, the UK Serious Fraud Office opened an investigation into British American Tobacco involvement in bribing policymakers in at least four African countries: Burundi, Comoros, Kenya, and Rwanda.

<u>Strategies to address the Commercial Determinants of Health</u>

The WHO provides a menu of policy options and cost-effective interventions for prevention and control of major noncommunicable diseases, to assist Member States in implementing actions to achieve global targets (19). Several of these actions address the commercial determinants of health:

Alcohol Use

- Regulating commercial and public availability of alcohol
- Restricting or banning alcohol advertising and promotions
- Using pricing policies such as excise tax increases on alcoholic beverages

Tobacco Use

- Implement WHO FCTC. Parties to the WHO FCTC are required to implement all obligations under the treaty in full; all Member States that are not Parties are encouraged to look to the WHO FCTC as the foundational instrument in global tobacco control
- Reduce affordability of tobacco products by increasing tobacco excise taxes
- Ban all forms of tobacco advertising, promotion and sponsorship

Unhealthy Diet and Physical Inactivity

- Implement recommendations on the marketing of foods and non-alcoholic beverages to children
- Replace trans fats with unsaturated fats
- Manage food taxes and subsidies to promote healthy diet

Case Study 3 Mexico Sugar-Sweetened Beverage Taxation(20)

In January 2014, the government of Mexico added a 1 peso per litre excise tax on any non-alcoholic beverage with added sugar to the country's Special Tax on Production and Services, which represents about a 10% increase in price for the consumer.

As a result, there was an average reduction of 7.6% in the purchase of taxed sugary drinks during 2014 and 2015. Households with the fewest resources had an average reduction in purchases of 11.7%. There was a 2.1% increase in purchases of untaxed beverages, particularly purchased bottled water. Over US$ 2.6 billion was raised during the first two years of implementation; some of this revenue is beginning to be invested towards installing water fountains in schools across Mexico.

The WHO slogan "make the healthy choice the easier choice" recognizes that individuals have a choice to consume healthier products or exercise but also identifies that consumer choices are highly influenced by factors beyond their control that determine the ease of choice [19]. Among these factors are the strategies employed by corporations which often cause the "easier choice" to be the less healthy ones. Therefore, public health is inevitably challenged with the question of how it will choose to interact with corporate influence when it comes to addressing the NCD epidemic.

References

1. Buse K, Tanaka S, Hawkes S. Healthy people and healthy profits? Elaborating a conceptual framework for governing the commercial determinants of non-communicable diseases and identifying options for reducing risk exposure. Globalization and Health. 2017.
2. Kickbusch I, Allen L, Franz C. The commercial determinants of health. The Lancet Global Health. 2016.
3. WHO, Obesity and Overweight Fact Sheet, 2018 https://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight
4. Cho, N. et al. (2018). IDF Diabetes Atlas: Global estimates of diabetes prevalence for 2017 and projections for 2045. Diabetes Research Clinical Practice. 138:271-281.
5. Jacobs A. How Chummy Are Junk Food Giants and China's Health Officials? They Share Offices. New York Times [Internet]. 2019; Available from: https://www.nytimes.com/2019/01/09/health/obesity-china-coke.html
6. World Health Organization. (2018). Diabetes. Available at: https://www.who.int/news- room/fact-sheets/detail/diabetes.
7. International Diabetes Federation. (2019). Diabetes. Available at: https://www.idf.org/aboutdiabetes/what-is-diabetes/types-of-diabetes.html
8. Kawasaki E. (2014). Type I Diabetes and Autoimmunity. Clinical Pediatric Endocrinology. 23(4):99-105.
9. Basu S. et al. (2012). Nutritional Determinants of worldwide diabetes: an econometric study of food markets and diabetes prevalence in 173 countries. Public Health Nutrition. 16(1):179-186.
10. Li R. et al. (2013). Medical costs associated with type 2 diabetes complications and comorbidities. American Journal of Managed Care. 19(5):421-430.
11. Bommer C. et al. (2018). Global Economic Burden of Diabetes in Adults: Projections From 2015 to 2030. Diabetes Care. 41(5):963-970.
12. Siegel K. et al. (2018). Prevalence of Major Behavioral Risk Factors for Type 2 Diabetes. Diabetes Care. 41(5):1032-1039.
13. Bhupathiraju S. et al. (2017). Epidemiology of Obesity and Diabetes and Their Cardiovascular Complication. Circulation Research. 118(11):1723-1735.
14. World Health Organization. Regional Directors Report. Available at: http://origin.wpro.who.int/regional_director/regional_directors_report/2017/media/2017_03_dn h_02_ncd.pdf
15. Walker R. et al. (2014). Impact of social determinants on health outcomes for type 2 diabetes: a systematic review. Endocrine. 47:29-48.
16. Clark M. et al. (2014). Social determinants of type 2 diabetes and Health in the United States. World Journal of Diabetes. 5(3):296-304.
17. Industry Strategies [Internet]. The Tobacco Atlas. 2016 [cited 2018 Jan 8]. Available from: https://tobaccoatlas.org/topic/industry-strategies/
18. Smith K, Dorfman L, Freudenberg N, Hawkins B, Hilton S, Razum O, et al. Tobacco, Alcohol, and Processed Food Industries – Why Do Public Health Practitioners View Them So Differently? Front Public Heal. 2016;
19. World Health Organization. Global Action Plan for the Prevention and Control of Non Communicable Diseases 2013- 2020 [Internet]. Geneva; 2013. Available from: http://apps.who.int/iris/bitstream/handle/10665/94384/9789241506236_eng.pdf?sequence=1
20. World Health Organization. Taxes on sugary drinks: Why do it? [Internet]. Geneva; 2017. Available from: http://apps.who.int/iris/bitstream/handle/10665/260253/WHO-NMH-PND-16.5Rev.1-eng.pdf?sequence=1

Source: [20]

Social Inequalities and NCD's

The WHO Global Commission on the Social Determinants of Health (CSDH) concluded that social injustice is killing on a grand scale [1]. Health outcomes show disparities when measured against other socio-economic variables, for example; occupation, income and education. Evidence overwhelmingly supports a positive association between low-income, low socioeconomic status, or low educational status and noncommunicable diseases (NCDs) [2]. Contrary to long-held beliefs, it is the deprived who are most exposed to the health-hazardous impacts of manmade socioeconomic, political and physical environments. Inequalities in health and access to health care are apparent on global level, between low-income countries and high-income countries. However, stark differences can also be seen on national level between regions, cities and even neighbourhoods.

Traditionally, NCDs were associated with high-income countries however, low-income countries have witnessed a dramatic increase in prevalence rates [3]. In African nations, NCDs are projected to exceed communicable, maternal, perinatal, and nutritional diseases as the most common causes of death by 2030 [4]. The burden of NCDs in low-income countries is catalysed by the damaging effects of globalisation including; unfair trade, irresponsible marketing, and rapid urbanization. Global marketing campaigns target children and adolescents in poorer countries to promote unhealthy food and alcohol. Additionally, transnational tobacco companies are aggressively exploiting the potential for growth in tobacco sales in low-income countries. Moreover, rapid and unplanned urbanisation exasperates NCDs. Urbanisation changes people's lifestyles by creating greater exposure to risk factors including; changes in diet and physical activity, exposure to air pollutants and harmful use of alcohol. Low-income countries possess NCD risk factors that are typically associated with poverty including, the use of biomass fuels and coal for cooking and heating, which are risk factors for lung cancer; childhood malnutrition, a risk factor for cardiovascular and metabolic diseases in adult life; and infections that can lead to rheumatic heart disease and various cancers [5].

"Contrary to long-held beliefs, it is the deprived who are most exposed to the health-hazardous impacts of man-made socioeconomic, political and physical environments"

Currently, the lack of access to NCD care and treatment in low-income countries leads to poor prognosis and survival in patients [6]. In the absence of a robust primary care system, NCDs go unnoticed until complications arise, which are often long-term and costly. WHO estimates the annual cost per person for haemodialysis, a treatment used for long-term complications of kidney disease totals; US$7,332 in Brazil [7], US$5,000 in India [8] and US$6,240 in Indonesia [9]. Treatment is often dependent on whether a patient has health insurance. Patients without insurance rely on loans or resort to selling property to afford the prolonged and costly treatments associated with NCDs [10].

Moreover, low-income countries suffer a 'double-disease burden' as communicable diseases continue to cause widespread mortality alongside NCDs. Diseases such as tuberculosis (TB), cholera, meningitis, hepatitis, malaria, zika and AIDS, are still major risks to health. Countries in tropical Africa bear the brunt of malaria, accounting for more than 90% of all cases occurring worldwide each year [11]. The disease is estimated to cost Africa more than US$12 billion annually and has slowed economic growth by 1.3% per year [12]. In addition, 95% of all HIV infections occur in low-income countries, especially in sub-Saharan Africa, dramatically cutting life expectancy [13]. Despite the increasing burden of NCDs in low-income countries, donor funding is lacking in comparison to communicable diseases. In 2005, low-income countries received $3 USD per death for NCDs, compared to $1,030 USD per death for HIV/AIDS from donors including; The World Bank, the US government, the Bill and Melinda Gates Foundation, and the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria [14]

Health inequalities are not only evident on global scale. Certain neighbourhoods, cities, regions and communities with low socioeconomic status, situated in high-income countries are also exposed to NCD burdens. For example, life expectancy is 10.1 years lower for men and 7.6 years lower for women in the most deprived areas of Sheffield compared to the most affluent areas [15]. Campaigns aimed at reducing NCDs through education can perpetuate inequality, if delivered without adequate structural support. For example, it is often thought a lack of education is the issue surrounding obesity. However, evidence shows low-income Europeans know what constitutes a healthy diet, but it is the affordability, accessibility and availability of foods that create barriers [16]. Food price is often the deciding factor when purchasing food, as opposed to nutritional quality. Moreover, studies have found deprived neighbourhoods in the US were associated with a higher density of fast food restaurants leading to increased obesity rates, especially in urban areas. Meanwhile, more affluent neighbourhoods were associated with a with a "healthier" food environment and lower obesity rates [17].

Inequality is not only having detrimental effects on physical health, but also mental health. Mental health is shaped by the wide-ranging characteristics (including inequalities) of the social, economic and physical environments in which people live. Although mental health problems can affect anyone at any time, they disproportionately affect certain social groups. Across the UK, those in the poorest fifth of the population are twice as likely to be at risk of developing mental health problems as those on average incomes. In addition, low income, alongside low educational attainment and

unemployment is associated with common mental health problems such as depression and anxiety [18].

The WHO Constitution envisages "…the highest attainable standard of health as a fundamental right of every human being." [19] There are tremendous social, economic and political barriers threatening this right for individuals across the globe. Inequality is catalysing the risk factors, complications and treatments of NCDs, constituting a widespread health crisis. Action must be taken to address injustice on international, national and local level. Fundamentally, the intrinsic link between social injustice and health quality is becoming a matter of life and death.

References

1. WHO. Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva. 2008:1-256
2. Niessen LW, Diwakar M, Akuoku JK, Mirelman AJ, Ahmed S, Koehlmoos TP et al. Tackling socioeconomic inequalities and non-communicable diseases in low-income and middle-income countries under the Sustainable Development agenda. The Lancet. 2018; 391: 2036–46
3. Judith Waswa J, Wairegi S , Asiko L. Non Communicable Diseases - The Elephant in the Room. Research Journal of Food and Nutrition 2018;2(3):55-64
4. WHO. Global status report on noncommunicable diseases. Geneva. 2010:1-162
5. Judith Waswa J, Wairegi S , Asiko L. Non Communicable Diseases - The Elephant in the Room. Research Journal of Food and Nutrition 2018;2(3):55-64
6. Cesare DM, Khang YK, Asaria P, Blakely T, Cowan MJ, Farzadfar F et al. NCD Action Group: Inequalities in non-communicable diseases and effective responses. Lancet 2013; 381: 585–97
7. Rodriguez-Iturbe B, Bellorin-Font E. End-stage renal disease prevention strategies in Latin America. Kidney International Supplements. 2005; 68: 30-6.
8. Sakhuja V, Sud K. End-stage renal disease in India and Pakistan: Burden of disease and management issues. Kidney International Supplement. 2003; 63: 115-8.
9. Sitprija VN. South East Asia: Fact and Concept. Kidney International Supplement. 2003; 63: 128-30.
10. White SL, Chadban SJ, Jan S, Chapmanc JR, Cass A. How can we achieve global equity in provision of renal replacement therapy? Bulletin of the World Health Organization. 2008;86(3):229-237
11. Ruxin, J, Paluzzi JE, Wilson PA, Tozan Y, Kruk M, Teklehaimanot A. Emerging consensus in HIV/AIDS, malaria, tuberculosis, and access to essential medicines. Lancet. 2005; 365:618-621
12. Bartram J, Lewis K, Lenton R, Wright A. Focusing on improved water and sanitation for health. Lancet. 2005; 365:810-812
13. Boutayeb A. The double burden of communicable and non-communicable diseases in developing countries. Transactions of the Royal Society of Tropical Medicine and Hygiene. 2006;100(3):191-199.
14. Sridhar D, Batniji R. Misfinancing Global Health: A Case for Transparency in Disbursements and Decision Making. Lancet. 200;372:1185–1191
15. Proud.T. Making a difference Corporate strategy 2017-2020. Sheffield Teaching Hospital NHS Foundation Trust. 2017:1-34
16. Loring B, Robertson A. Obesity and inequalities: Guidance for addressing inequalities in overweight and obesity. WHO Regional Office for Europe. 2014:1-35
17. Chennakesavalu M and Gangemi. Exploring the Relationship between the Fast Food Environment and Obesity Rates in the US vs. Abroad: A Systematic Review. Journal of Obesity & Weight loss Therapy. 2018;8(1):1-17
18. Elliott, I. Poverty and Mental Health: A review to inform the Joseph Rowntree Foundation's Anti-Poverty Strategy. Mental Health Foundation. London. 2016:1-109
19. WHO. Constitution of the World Health Organisation. Basic Documents. Supplements. 2006; 45:1-18
20. https://www.google.com/search?rlz=1C1GGRV_enJM751JM751&biw=1600&bih=662&tbm=isch&sa=1&ei=YxVPXJjdDvCl1fAP3s2gwA8&q=social+inequality+south+africa&oq=social+inequality+south+&gs_l=img.1.0.0i24.4309.5909..7527...0.0..0.91.497.7.....1....1..gws-wiz-img.....0j0i67j0i8i30.5LFTjYadfGw#imgrc=B5TrZl_z60lZSM

Healthcare system strengthening: Combatting NCDs in developing countries

Healthcare system strengthening remains a core tool to combat NCDs in LMICs. Member states must shift from problem-orientated to goal-orientated care, empowering patients by focusing on the individual [1]. Investment in integrated primary care and better training of primary care remains a major opportunity to strengthen healthcare systems.

Access to medicines

Access to medicines remains a major barrier in reducing the impact of non-communicable diseases, accounting for 80% of deaths in low and middle-income countries (LMIC) [2]. Whilst access to medicines remains a universal challenge, impact is much more severe in LMICs, where essential medicines account for 20-60% of health spending, in contrast to 18% or lower in high-income countries [3]. It is important to note that access encompasses far more than just availability, but it also includes geographical access (travel cost and time), cultural access (gender and minority issues) and financial access (pricing and ability to pay) [4]. A primary example of improved access to medicines can be demonstrated through the HIV epidemic. A few decades ago, HIV/AIDS treatments were extremely expensive, and only accessible in high-income countries. However, due to the implementation of vertical and disease-orientated strategies alongside lobbying efforts, there has been remarkable reductions in cost, which enabled treatment expansion and reduced mortality. Today, first-line HIV drugs cost less than US$100 per person per year, a 99% reduction from more than $10 000 in 2000. The number of people receiving HIV treatment doubled in just 5 years, from 9 million in 2011 to more than 18 million today [5]. Therefore, to decrease the rise of NCDs, we must ensure equitable access, alongside assured safety and quality use by and for prescribers and consumers [3].

Capacity building and training

An essential step to combatting the rapidly rising burden of non-communicable diseases (NCDs) in low- and middle-income countries (LMICs) is to build local capacity to address needs. A skilled work force is required to do this, and skills are most commonly sub-categorised into: scientific skills, technical skills, and communication-based skills [5]. A common training method to improve both technical and communication-based skills is through the use of training courses. The international committee for the Red Cross launched a training course titled "H.E.L.P" – referring to health emergencies in large populations [7]. This course aimed to increase the professionalism in a time of crisis, such as armed conflict, natural disaster or disease outbreaks.

Further actions that could be taken for member states to promote capacity building may include [8]:

- Strengthening leadership and financing
- Expanding quality services coverage
- Human resources development
- Increasing access

The lack of scientific skills have also been mirrored in low research activity, with sub-Saharan Africa contributing to less than 1% of global biomedical publications [6]. According to WHO, research capacity strengthening may be defined as 'any efforts to increase the ability of individuals and institutions to undertake high-quality research and to engage with the wider community of stakeholders' [9]. In order to combat NCDs, capacity building and training within developing countries remains imperative, not only to improve their ability to respond, but also to identify needs.

Sustainable development goals and NCDs

The Sustainable development goals (SDGs) are a collection of 17 goals set forth by the United Nations General assembly in 2015, promoting humanitarian law, equity, and health for all. SDG 3 (Good Health and Well-being) includes target 3.4, which aims to reduce premature NCD mortality by a third by 2030 [10]. It is important to note that all the SDGs are heavily connected to each other. For instance, as NCDs exacerbate economic inequities within societies, they also act as a barrier to achieving SDG 1 (No Poverty), SDG 2 (Zero hunger), SDG 4 (Quality education), SDG 5 (Gender equality), and SDG 10(Reduced inequality), whilst SDG 11(Sustainable cities and communities) and SDG 12 (Responsible production and consumption) offer clear opportunities to reduce the NCD burden and to create sustainable and healthy cities [11]. The SDGs thus emphasise the need for a multi-sectoral and trans-disciplinary approach to tackle the rise of NCDs, the need for partnerships to transform our world.

Sustainable NCDs funding: Future Demand

Non-communicable diseases (NCDs) comprise a large burden on human health worldwide. NCDs accounts for 70% of mortality worldwide and 67% of deaths in lower-income and middle-income countries [12]. Along with rapid growth of NCDs, the economic burden of diseases is staggering. A study found that from 2011 till 2030, the total lost output from the four major NCDs combined with mental health conditions is projected to reach $47 trillion USD [13]. In 2010, this loss (per annum scale) was accounted to approximately 5% of global GDP [13].

However, NCDs lacks significant development assistance and yet not been prioritized in the global development agenda. The Institute for Health Metrics and Evaluation (IHME) reported $377 million expenditure and only 1.2% of total Development Assistance for Health (DAH) [14], NCDs remain one of the smallest areas of funding. In addition, inequal distribution of assistance is observed around the globe. East Asia and Pacific with a large population received lowest DAH per DALY for NCDs in comparison to Latin America and Caribbean [12].

Although NCDs comprised half of the entire global burden of disease in 2014 but received less than 2% of all international health aid (US$ 492 million out of US$ 36 billion) [16]. In contrast, HIV represented 4% of the global burden of disease but received 29% of global funds [16].

Aligning with the Sustainable Development Goals, 193 countries sanctioned the target of reducing premature NCD mortality by a third in 2015 [15]. However, in many nations of the world, the largest portion of domestic funding comes from 'out of pocket' payment: patient pay for their treatment [16].

Out-of-pocket payments account for 48% of all health expenditure in low-income countries, 36% in middle-income countries and 15% in high-income countries [16]. Despite the fact that NCDs have been the leading cause of mortality in most countries for decades, only half of WHO member states had NCD line items in their health budgets in 2011[16].

Possible Funding Approaches [16]

The WHO Global Coordination Mechanism on NCDs financing working groups explored NCD financing options with an emphasis on LMICs. The main sources of available finance include taxation, loans, engagement with the private sector, impact investment and innovative financing mechanisms [16].Post 2015 NCD response, the high-level UN commitment to find new and sustainable sources of NCD financing led to the establishment of the NCD funding working group who identified three areas: domestic, overseas and innovative financing sources.

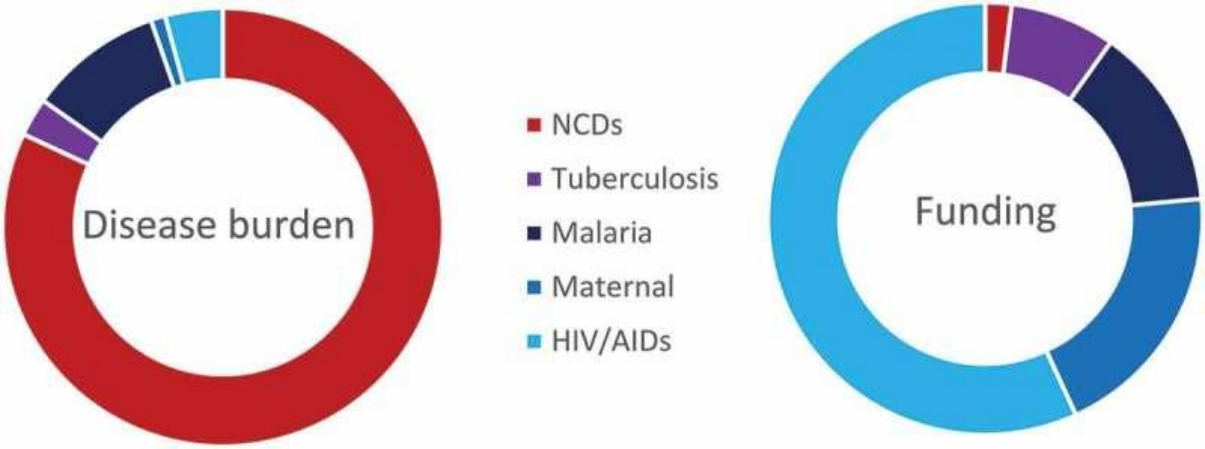
1. Domestic

Increased revenue from taxation and long-term economic growth, coupled with commitments to proportionally increase the amount of government expenditure earmarked for NCDs, represents the most sustainable way of financing NCD prevention and control in LMICs

2. Overseas development assistance

The WHO working group endorsed the target of spending 0.7% of gross national income on aid (4). Emerging donors, including BRICS countries (Brazil, Russia, India, China, South Africa) and the Gulf States are possible financial supporters with understanding of low-cost approaches to managing NCDs.

Figure 1. Global Disease Burden and Global Funding [4]



3. Innovative financing mechanisms

I. Development loans

International Donor such as the World Bank and the Inter-American Development Bank supply NCD inclusive loan to the countries to support SDG target 3.4. Countries can apply for investment in NCDs with intervention agendas.

II. Engaging the private sector

Private sector can be engaged in NCDs prevention approach in all possible ways. Partnership can be established with private sector through operating fitness sector, promoting sell of fruits and vegetables, and including pharmaceutical industry. Such engagement can promote NCD prevention agenda at lower cost.

III. Innovative financing mechanisms

- Voluntary contributions
- Compulsory levies or taxes
- Financial mechanisms and facilities [16]

NCDs are a leading cause of premature mortality, which primarily affects the poor and less educated people. Furthermore, huge costs from medical expenses associated with NCDs are more likely to be experienced by the poor than by the rich [17]. It is necessary to encourage governments to explore bilateral and multilateral channels. However most of the bilateral aid agencies do not fund NCDs as a matter of policy [12].

References

1. De Maeseneer, J., et al., *Tackling NCDs: a different approach is needed.* Lancet 2012. 379(9829): p. 1860-1.

2. World Health Organization, 2018. Access to non communicable diseases medicines. *World Health Organization*. Available at: https://www.who.int/medicines/areas/policy/access_noncommunicable/en/ [Accessed January 10, 2019].

3. Niessen, L.W. and J.A.M. Khan, *Universal access to medicines.* The Lancet, 2016. 387(10013): p. 9-11.

4. Bradley, H. and R. Laing, *Access to medicines - overcoming the barriers.* East Mediterr Health J, 2015. 21(8): p. 553-4.

5. Vella, S. and D. Wilson, *Access to medicines: lessons from the HIV response.* The Lancet HIV, 2017. 4(4): p. e147-e149.

6. Sturke, Rachel et al. "Addressing NCDs through research and capacity building in LMICs: lessons learned from tobacco control" *Global health action* vol. 9 32407. 19 Aug. 2016, doi:10.3402/gha.v9.32407

7. International Committee of the Red Cross, 2017. Health Emergencies in Large Populations - the HELP Course. *International Committee of the Red Cross*. Available at: https://www.icrc.org/en/publication/health-emergencies-large-populations-help-course [Accessed January 15, 2019].

8. World Health Organization, 2013. *Global Action Plan 2013-2020*, Geneva. Available at: https://apps.who.int/iris/bitstream/handle/10665/94384/9789241506236_eng.pdf;jsessionid=C4524C6BC434294DE84F2F0E448AF324?sequence=1.

9. Langer A, Diaz-Olavarrieta C, Berdichevsky K, Villar J. Why is research from developing countries underrepresented in international health literature, and what can be done about it? Bull World Health Organ. 2004;82:802–3.

10. World Health Organization, 2019. About the Sustainable Development Goals. *World Health Organization*. Available at: https://www.un.org/sustainabledevelopment/sustainable-development-goals/ [Accessed January 20, 2019].

11. Nugent, R., et al., Investing in non-communicable disease prevention and management to advance the Sustainable Development Goals. The Lancet, 2018. 391(10134): p. 2029-2035.

12. Development Assistance and NCDs | NCD Alliance [Internet]. [cited 2019 Jan 10]. Available from: https://ncdalliance.org/development-assistance-and-ncds

13. The Global Economic Burden of Non-communicable Diseases [Internet]. 2011 [cited 2019 Jan 10]. Available from: www.weforum.org/EconomicsOfNCD

14. Institute for Health Metrics and Evaluation. Financing Global Health 2013 [Internet]. Seattle, WA; 2014. Available from: http://www.healthdata.org/policy-report/financing-global-health-2013-transition-age-austerity

15. 2013-2020 global action plan for the prevention and control of noncommunicable diseases [Internet]. 2013 [cited 2019 Jan 10]. Available from: www.who.int

16. Allen LN. Financing national non-communicable disease responses. Glob Health Action [Internet]. 2017 [cited 2019 Jan 10];10(1):1326687. Available from: http://www.ncbi.nlm.nih.gov/pubmed/28604238

17. Niessen LW, Khan J, Mohan DrPH D, Trujillo A, Peters DrPH DH, Niessen LW, et al. The Lancet Taskforce on NCDs and economics 2 Tackling socioeconomic inequalities and non-communicable diseases in low-income and middle-income countries under the Sustainable Development agenda. www.thelancet.com [Internet]. 2018 [cited 2019 Jan 10];391:2036–82. Available from: http://dx.doi.org/10.1016/

Mental Health and Dementia in Ageing Populations

Source: [11]

Mental Health

Mental health is a state where an individual can make and maintain affectionate relationships with others, perform in expected social roles, to manage, alter, recognize, acknowledge and communicate positive actions and thoughts as well as to manage difficult emotions (1). Mental health disorders affect one in every 4 people at some point in their lives (2). It is estimated that around 1.1 billion people experienced a mental or substance use disorder in 2016, placing mental health as one of the leading causes of ill-health and the leading cause of years living with disability worldwide (3). The largest number of persons experienced an anxiety disorder, followed by depression, alcohol use disorders, drug use disorders, bipolar disorder and schizophrenia (3). Mental health disorders are debilitating forms of NCDs with broad consequences for one's socioeconomic attainment and quality of life for individuals and families alike (4). Mental health disorders are important risk factors for premature mortality, not only in industrialised, but also low-income and middle-income, countries(3).

Mental Health and other NCD's: is it a cause or consequence?

It is now well established that mental illness is closely associated to physical illness. Mental health issues are linked to an increased risk of mortality due to its associated physical health issues including cardiovascular disease and cancer (4). Our understanding of the multifaceted and bidirectional links between mental illness and NCDs is growing.

The strongest links which are emerging so far are between depression and cardiovascular and cerebrovascular disease (strokes and heart attacks), diabetes, and even some cancers. A person with depression who has a heart attack or develops depression after a heart attack is much more likely to die earlier or experience a lower quality of life than someone without depression (5).

This observation can be explained through the multiple ways which depression and other NCDs interact. Firstly, depression is associated with behaviours which increase NCD risk exposure namely smoking, alcohol disorders, unhealthy diet and physical inactivity (4). Secondly, underlying mechanisms inherent in depression (eg. abnormalities of the immune and hormonal systems) are likely to impact an individual's physical health (4). Additionally, depression negatively affects the treatment of NCD. In depression, non-compliance rates can be up to three times higher (5). This poses a significant threat, especially for chronic diseases as long-term treatment is essential to stave off debilitating and costly complications (eg. blindness, kidney failure or nerve damage in diabetes) (5).

For these reasons, several scholars argue that a coordinated approach which not only addresses

traditional NCD targets like poor diet, physical activity, tobacco smoking but also includes mental health issues is important to effectively tackle NCDs (4,5).

Dementia

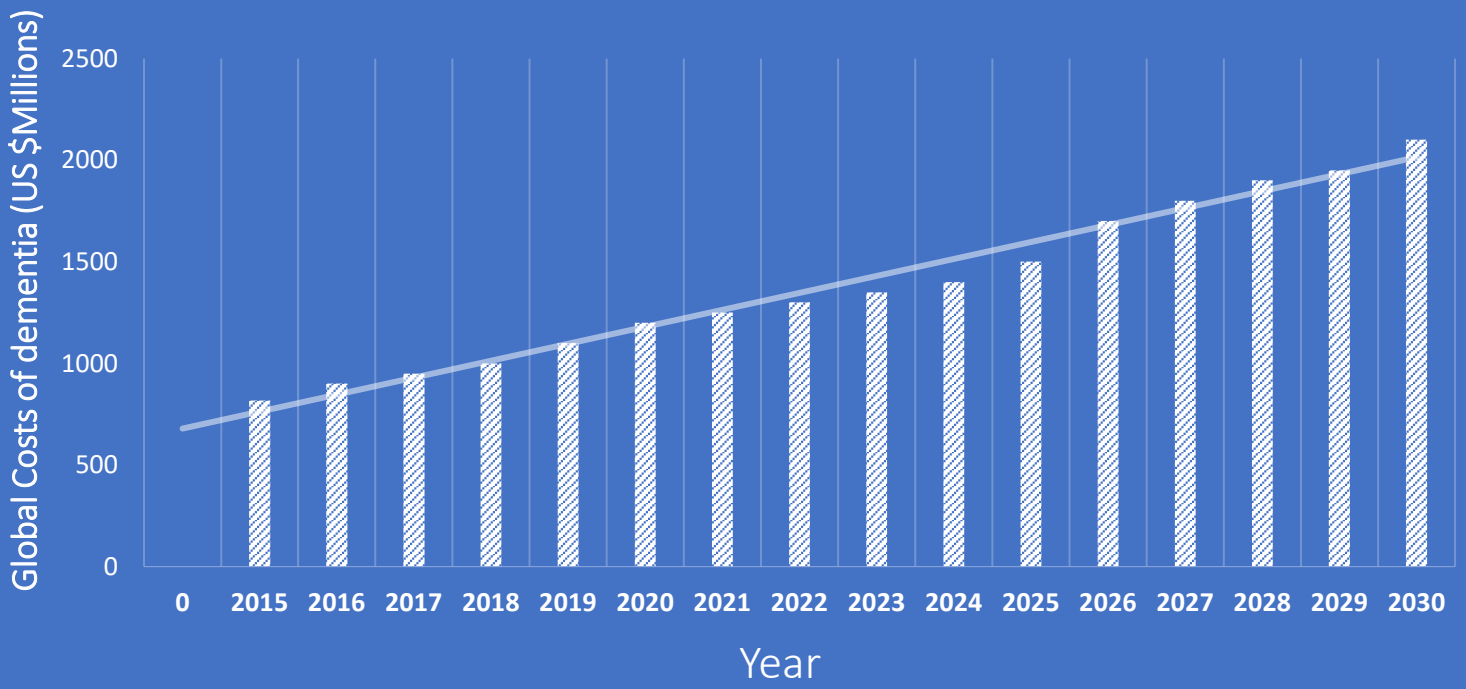
Dementia is a syndrome where a person experiences multiple-domain cognitive impairment which is severe enough to affect everyday function [6]. The word 'dementia' describes a set of symptoms that may include memory loss and difficulties with thinking, problem-solving or language. A person with dementia may also experience changes in their mood or behaviour [7]. There are many types of dementia which include: Alzheimer's disease, Lewy body dementia, vascular dementia and frontotemporal dementia.

Alzheimer's disease is the most common cause of dementia [8]. The specific symptoms that someone with dementia experiences will depend on the parts of the brain that are damaged. Common early symptoms include memory loss such as forgetting recent events, faces and people's names, losing and forgetting personal belongings such as car kays, phones and struggling to find the right word in a conversation and the disease gets more severe, symptoms will include; finding it hard to talk, failing to walk and dress up on their own, stop eating, failing to think and make decisions, body shaking, hallucinations and depression among others [8].

Worldwide, around 50 million people have dementia and 60% of these are from low- and middle-income countries. The number of people with dementia is expected to increase by 204% from 50 million to 152 million by 2050 due to the rise of life expectancy [9]. Every year, there are 9.9 million new cases, 5.2% of people over the age of 60 are living with dementia globally [10]. Although age is the strongest known risk factor for dementia, it is not an inevitable consequence of ageing. Further, dementia does not exclusively affect older people – young onset dementia (defined as the onset of symptoms before the age of 65 years) accounts for up to 9% of cases. The disease affects women twice as compared to men [6]. Some research has shown a relationship between the development of cognitive impairment and life-style related risk factors that are shared with other non-communicable diseases. These risk factors include physical inactivity, obesity, unbalanced diets, tobacco use and harmful use of alcohol, diabetes, and midlife hypertension. Additional modifiable risk factors include depression, low educational attainment, social isolation, and cognitive inactivity [9].

Globally, the annual societal and economic cost of dementia is US $818 billion, and it is expected to become a trillion-dollar disease in just three years' time [9]. The findings show that the cost of dementia has increased by 35% since the 2010 from $604 billion to $818 billion [7]. In 2018, the United

Figure 3: Global Cost of Dementia (US$ Millions) [10]



Kingdom government spent £33.7 million on research towards Alzheimer's and it has spent £101, 33, 175 since 1992 [7].

Alzheimer's also has a large effect on the people who care for afflicted loved ones. 94% people living with dementia are cared for at home, and this results in significant social and economic strain [8]. The cost of taking care of people living with dementia is enormous and can disrupt the social aspect of life for their carer [6].

References

1. Bhugra D, Till A, Sartorius N. What is mental health? Int J Soc Psychiatry. 2013;

2. Bebbington P. The World Health Report 2001. Social Psychiatry and Psychiatric Epidemiology. 2001;

3. Ritchie H, Roser M. Mental Health [Internet]. 2018 [cited 2019 Jan 8]. Available from: https://ourworldindata.org/mental-health

4. Pryor L, Da Silva MA, Melchior M. Mental health and global strategies to reduce NCDs and premature mortality. Lancet Public Heal. 2017;

5. Maxwell J, Blashki G. Dancing in the rain : living with NCDs [Internet]. Blashki G, Sykes H, editors. Future Leaders; 2015. 115-131 p. Available from: http://www.futureleaders.com.au/book_chapters/pdf/Dancing-in-the-Rain/Janie-Maxwell_Grant-Blashki.pdf

6. Quinn JF. Read: Neurology in Practice - Dementia [Internet]. 1st Editio. Gross, Robert A. Mink JW, editor. Sussex: John Wiley and Sons Ltd; 2014 [cited 2019 Jan 27]. Available from: https://www.dawsonera.com/readonline/9781118656228

7. Patterson C. World Alzheimer Report 2018 The state of the art of dementia research: New frontiers. Alzheimer's Disease International (ADI). London; 2018.

8. Alzheimer Research UK. About | Alzheimer's Disease [Internet]. 2018 [cited 2019 Jan 27]. Available from: https://www.alzheimersresearchuk.org/about-dementia/types-of-dementia/alzheimers-disease/about/

9. World Health Organization. WHO | Dementia: a public health priority [Internet]. World Health Orgsnization. World Health Organization; 2018 [cited 2019 Jan 27]. Available from: https://www.who.int/mental_health/neurology/dementia/en/

10. Prince M, Wimo A, Guerchet M, Gemma-Claire A, Wu Y-T, Prina M. World Alzheimer Report 2015: The Global Impact of Dementia - An analysis of prevalence, incidence, cost and trends. Alzheimer's Disease International. London; 2015.

11.https://www.google.com/search?q=mental+health&rlz=1C1GGRV_enJM751JM751&source=lnms&tbm=isch&sa=X&ved=0ahUKEwis27Oq6ZDgAhVZSRUIHf_vCjcQ_AUIDygC&biw=1600&bih=662#imgrc=r3Svlf8_gCJ-_M:

The Cathedral Archer Project

Homelessness is one of the most acute social and economic problems in our society, effecting individuals both physically and mentally. At the Cathedral Archer Project (CAP) we help homeless and vulnerable adults from sleeping bag to employment supporting them to lead fulfilling and enjoyable lives.

We believe that every person who comes through our doors is an individual with talents, the ability to live a healthy, enjoyable life, and who, in time and with support will have aspirations they want to achieve.

For nearly 30 years we have been supporting homeless people and other vulnerable and marginalised groups, providing a place where they can find a warm, safe and welcoming environment.

FACT BOX: 2018

On average we saw 75 people a day

1,300 people walked through our door

We served over 11,000 breakfasts

We handed out 862 food parcels

The nurse held 155 appointments from our medical room

We did 633 loads of laundry

We turned the shower on 1,250 times

We provide a range of services including breakfast and lunch, food parcels, access to showers, laundry facilities, telephones, computers, use of the project as a postal address, and in house medical and dental clinics, a volunteering programme, activities ranging from English and Maths classes to cookery and yoga, and employment opportunities through our Just Works initiative.

Matt* had been sleeping on a chair in a disused office space for over four months when he came to the Project. He initially came to us because he needed help for his dog. But when he talked to us we realised that he needed support with his depression and accommodation.

Alongside finding Matt a home we supported him to attend GP appointments regularly, open a bank account, sort his benefits and begin to look for work. From Matt's view he now has his own home for him and his dog: "I am so thankful it is so much more than I expected."

*Name changed to protect identity

It is our experience, supported by research, that through building positive relationships, we can help people change their lives for the better.