LEVERAGING COMMUNITY STRENGTHS TO PREVENT NCDs AMONG URBAN REFUGEES AND HOST POPULATIONS IN JORDAN

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Purpose

The aim of this policy brief is to inform deliberations on NCD programming by elevating the discourse on the capacity of communities to advance NCD prevention. This brief provides examples of efforts that can be implemented to address NCD needs in various settings and notes that both health and non-health actors can identify entry points for contributing to reducing the burden. This document is based upon a 3-phase process that took place in 2018 and 2019 and included (1) a scoping review of the NCD intervention literature from urban refugee contexts in the Middle East and North Africa, (2) a qualitative NCD study conducted in Jordan with urban based Syrian refugees[4] and (3) an expert consultative convening, hosted in Amman, to identify intervention and policy recommendations.

Scoping review: NCD interventions for refugees in urban MENA.

Qualitative study: Experience of refugees with NCDs residing in urban Jordan.

Expert consultative process: Prioritize focal areas with health, education, humanitarian and academic actors in Jordan.

The first two phases focused on the NCD needs of refugees in urban settings. However, in an effort to ensure equity and access across all communities, the third phase and the final recommendations address common NCD needs across all populations residing in Jordan. This brief also relies on Jordan's Health Sector Strategy, the Jordan Response Plan, research and implementation efforts conducted in the MENA region and examples from diverse settings across the globe. Opportunities exist to decrease the burden of disease in Jordan through a focus on primary and secondary prevention of NCDs and investment in the strengths and assets that exist within Jordanian communities.

Jordanian health sector strategies and responses

Jordan has achieved measurable improvements in health and development, while managing social and economic pressures, including conflicts in neighboring nations and the influx of more than one million Syrian refugees. More specifically, Jordan has made impressive strides in the health domain including the reduction of child mortality from 37 per 1,000 live births in 1990 to 18 per 1,000 live births in 2015, and the reduction of maternal mortality from 110 per 100,000 live births in 1990 to 58 per 100,000 live births in 2015.[5 6] In addition, life expectancy stands at 74.4 years and the nation has effectively controlled vaccine preventable diseases including measles and polio.[7]

Building on these achievements, the 2015-2019 Health Sector Strategy outlines further advances in health with commitments to universal health coverage and the prevention of non-communicable diseases. The strategy articulates a focus on NCD education and the reduction of risk factors including smoking and physical inactivity. In addition to NCDs among Jordanian citizens, the government is also focusing on these issues among refugee populations, as described in the 2018-2020 Jordan Response Plan (JRP). The JRP presents specific health objectives focused on improving the quality and access to primary, secondary and tertiary care; improving the quality and uptake of community interventions and strengthening health systems.

This policy brief is well aligned with Jordan's National Health Sector Strategy and the 2018-2020 Jordan Response Plan (JRP), and emphasizes the need to address NCDs through investing in community-based prevention efforts that improve health outcomes and reduce costs. The brief aims to build on Jordan's approaches and provide additional methods for how to prevent NCDs among Jordanian citizens as well as displaced populations residing within Jordan. The following sections outline NCD challenges in Jordan and provide recommendations and case examples from the Middle East and North Africa region and other diverse settings across the globe.

The NCD burden

In 2018, NCDs accounted for 71% of all deaths globally,[8 9] 74% of deaths in the MENA region and 76% in Jordan.[10 11] The vast majority of NCD deaths are due to cardiovascular disease, chronic respiratory disease, cancer and diabetes.[12] Prevalence of these diseases and their risk factors are particularly high in Jordan.[13-15] In 2018, Abujbara et al. conducted a national survey in Jordan that identified hypercholesterolemia (a risk factor for cardiovascular disease and stroke) in 44.3% of the adult population, a two-fold increase since 1994.[13] Diabetes and impaired fasting glucose prevalence was also high--approximately 25% in 2008, with obesity prevalence at 51.7% of the population.[13 16] Jordanian citizens share a similar health and demographic profile to Syrian refugees. As a result, the presence of large numbers of refugees has increased the burden and made disease prevention vital.

In addition to the adverse impact of NCDs on the health of the population, NCDs are also a threat to economic development.[12] They decrease productivity among employed adults, increase disability as a result of secondary complications and cause catastrophic spending, pushing people further into poverty.[12 17] NCDs are an urgent concern to various stakeholders who are tasked with promoting wellness among both Jordanians and displaced populations. National health systems and humanitarian actors are challenged by these pressures and are called to adapt and innovate. While the situation is alarming, opportunities exist to prioritize the prevention of NCDs and reduce mortality, morbidity and the financial pressure on health systems and affected persons.[18]

Why invest in prevention?

This policy brief is focused on primary and secondary prevention of NCDs because prevention is cost-effective and the over emphasis on treatment is unsustainable for families and the health system. The World Health Organization defines primary prevention as "actions aimed at avoiding the manifestation of a disease."[19] Such actions include screening for diseases as well as interventions to address social, behavioral, economic and commercial risk factors such as tobacco use, unhealthy diets and physical inactivity.[12] Secondary prevention initiatives intervene to prevent disease complications among those already diagnosed.[19 20] These efforts are key to improving health and reducing the costs associated with complications, including loss of sight, foot amputation, stroke and kidney failure.[12 20]

The recommendations outlined in this brief present a combination of primary and secondary prevention efforts in order to exhibit the breadth of intervention possibilities. These recommendations are aligned with the global discourse on the prevention of NCDs, the WHO Global Business Plan for NCDs, and the recent commitments made by the Jordan NCD Alliance -- a coalition of civil society actors supporting the Ministry of Health in tackling NCD risk factors. Investment in prevention can aid Jordan in improving health, reducing health expenditures and increasing life expectancy.

Recommendation #1: Collaborate with community partners & non-traditional health actors to promote physical activity & healthy diets

Community assets, such as, knowledgeable neighbors, public parks and active small businesses, are resources that can create a platform for grassroots actions to prevent NCDs. These assets are frequently underestimated and dismissed as irrelevant to health promotion. On the contrary, prevention efforts can be tackled in community settings including religious institutions, hair salons and barbershops, schools, restaurants, shopping malls and other public indoor and outdoor spaces.[2 21 22] Prevention programs may include education sessions about chronic diseases, basic clinical testing, self-administered disease risk assessments and behavior change counseling.[23 24] They may also include community exercise events and cooking classes that encourage modifications to food preparation.[2]

Larger, more robust prevention efforts should also tackle structural risk factors associated with the high prevalence of NCDs in Jordan. These include the marketing of unhealthy food and tobacco products, asymmetry in the availability of information about chronic diseases, as well as the increase in fast-foods outlets in urban settings, and income inequality.[25] While challenging, policy changes in these arenas have been proven effective at reducing the upstream risk factors of NCDs among various marginalized populations across the globe.[26]

Health facilities and clinicians have traditionally focused on helping people heal or manage disease. However, prevention activities create an opportunity and entry point for community activism in relationship to health and wellness. Organizations that have not traditionally prioritized health may be motivated to do so if beneficial collaborations are created. In addition to the above mentioned potential partners, media outlets, artists, and entrepreneurs will also likely be interested in supporting prevention efforts in Jordan and across the region.[27]

UNRWA case study: Jordan, West Bank, Gaza, Lebanon[2]

The United Nations Relief and Works Agency provides support to Palestine refugees across 5 settings in the Middle East. In response to the increasing NCD needs among this population, the UN agency undertook a diabetes campaign in 2013. 1300 patients with diabetes were randomly selected to be part of the project with the aim of preventing secondary complications. Note that while this is a secondary prevention effort, this intervention is recognized for its potential to also serve as a primary prevention method.

The intervention included, (1) education sessions, (2) cooking classes and (3) exercise events. Education sessions were focused on basic knowledge about diabetes, risk factors, medications, complications and other key concerns. Cooking classes were formed in collaboration with community organizations, patients and health workers. Exercise events also built upon community partnerships with schools, NGOs and volunteer physical trainers. The outcomes of the intervention were measured after six months.

Significant improvements were observed in body measurements (i.e., weight, body mass index) and biomarkers (i.e., blood glucose, cholesterol, blood pressure), as well as patient knowledge and behavioral practices.

Recommendation #2: Develop peer coaching & education activities to foster social cohesion and increase adherence to clinical advice

People with NCDs initially learn about their illness from a physician, but often later rely on social networks for information and support. Social networks are often viewed as more trustworthy and reliable. In addition, operational challenges in the health sector, including long wait periods and limited time for patient education and counseling, also encourage reliance on other sources of support.[28] Peer coaching can advance health through disease screening, education, psychosocial support and community engagement. This method has been used in many settings to assist people with chronic diseases.[3 29] A peer may be a community health worker (CHW), a refugee outreach volunteer or a layperson with a shared disease experience and a willingness to provide advice and counsel.[30-32]

Peer coaching can aid people with NCDs in controlling their illness and also get accurate disease-related information into the public domain. Peer coaches may require short term training on various issues including (1) basic information on NCDs, (2) coaching tools and techniques and (3) behavior change approaches.[3] Peer coaching is beneficial for health education but can also improve social cohesion and strengthen community relationships. In light of the migration of large numbers of refugees with NCDs into Jordan, opportunities exist to develop programs that partner across national identities and foster positive relationships, while improving health status and health outcomes.

Peer coaching can occur at community centers, supermarkets, homes and by text message. This technique is relevant for all age groups and thus may also be useful in schools for preventing NCDs or the exacerbation of disease among children and youth. Peer interventions are effective at advancing education and disease management at a low cost. They are also useful tools for promoting personal empowerment and aiding communities in identifying solutions to their most pressing problems.

Multi-country case study: South Africa, Thailand, Cameroon, Uganda[3]

"Peers for Progress" was piloted in 2008 in 4 country settings to test a diverse selection of peer efforts to support people with diabetes. In each country setting, peers were operationalized differently. In South Africa's, "Diabetes Buddies" program, peer supporters were women who also had diabetes. In Thailand, peer supporters were community health workers, more formal members of the Thai health system.

Peers provided a diverse array of support to people with diabetes including group and individual meetings about self-management, phone calls & text suggestions/reminders, home visits for follow up with diagnosed cases, the development of community gardens, as well as group meals and cooking sessions to promote healthy eating. Training for peer supporters included the basics of aiding people with self-management, providing social and emotional support and referring people into primary healthcare centers (PHCs) for more advanced care needs.

One of the more novel activities implemented by the team in Thailand was a bicycle operated irrigation system for the community garden. The garden itself was an opportunity to grow, harvest and cook healthy foods and the bicycle promoted physical activity. Significant clinical improvements were observed in Thailand, Cameroon and Uganda.

Recommendation #3: Promote empowerment and self-management among people with uncomplicated NCDs

Self-management techniques promote the control of chronic diseases including asthma, diabetes and hypertension.[30 33] Self-management interventions can be conceptualized as advancing knowledge, behavior change or skill development.[29 34] These goals can be achieved through the use of home-based disease monitoring devices (i.e., glucometers, blood pressure monitors), patient-controlled health records (PCHR) and the use of cell phones for text-based communication and education.[1 35-37]

Home-based disease monitoring devices support patients in tracking their measurements including blood pressure and blood glucose.[1 36] In high-income settings, patients often have access to these devices and can make lifestyle changes based upon the readings. In low-and middle-income settings, these devices may not be available for many of those in need.

Patient controlled health records (PCHR) are another tool that supports self-management. PCHRs are medical records that are accessible to patients and can be reviewed to advance understanding of one's illness.[37] They can also be taken to new facilities in different countries and are thus useful for displaced populations. Historically, medical records have remained in facilities in paper or electronic formats but PCHRs support self-education and medical record mobility.

mHealth has also been a useful tool for advancing self-management.[37] Cell phones have been used for text-based education about diet, exercise, medication adherence and other lifestyle messages.[38] Cell phones have also been used to foster communication between clinicians and patients, including phone calls with nurses or text reminders about upcoming appointments.[23] Self-management efforts reduce the likelihood of developing secondary complications and prevent morbidity and premature mortality.

Case study: Thailand[1]

In an effort to address the increasing prevalence of hypertension in Thailand, in 2013, a hospital-based research team undertook a randomized control trial of a self-monitoring program for people with hypertension. These patients included all age ranges and were from one catchment area of the community hospital in Thailand.

Patients with hypertension were provided with a blood pressure (BP) monitor for home use, along with training. They received an individual training session on how to use the monitor, how to record the information and how to interpret the results. The intervention required that patients measured their BP twice per day for 6-months at distinct points during the day. It also required that they documented the recordings and discussed them with their physician during regular visits. Patients were followed up at 6-months and 12-months.

Significant reductions in blood pressure were seen in the oldest age group, 60+ years. The author's hypothesized that self-monitoring was most effective for this group because they spent a large portion of time at home and could conduct the measurements and better adhere to the protocol. Additional studies may identify how best to support younger populations. The intervention group (111 patients) was compared to a control group (113 patients) from the same population.

Conclusion

The rising burden of NCDs in Jordan calls for a multipronged strategy to prevent disease onset and exacerbation. Community members and their resources are key components of any successful disease prevention strategy and should be empowered to participate, create and lead in the development of solutions that address NCDs. Incorporating affected populations in problem solving processes builds on years of research that recognizes the capacity for self-help among affected groups, the desire to have control over one's health, and the resilience that is cultivated when people are supported by friends, family and community.

Collaborate with **community partners** and non-traditional health actors to promote physical activity and healthy diets.

Develop **peer coaching** and education activities to foster social cohesion and increase adherence to clinical advice.

Promote empowerment and **self-management** among people with uncomplicated NCDs.

This policy brief provides examples of efforts that can be implemented to address NCD needs in partnership with community organizations. The first recommendation focuses on collaborations that aim to increase physical activity and change eating habits. The second recommendation presents a peer-support program that recruits knowledgeable persons to coach others with NCDs on techniques for managing their illness. The third recommendation highlights self-management as a tool for the prevention of secondary complications among those already diagnosed. These approaches can aid Jordan in preventing NCD onset and exacerbation, averting morbidity and mortality, and reducing health expenditures.

Further reading

1. Aekplakorn W, Suriyawongpaisal P, Tansirisithikul R, et al. Effectiveness of Self-Monitoring Blood Pressure in Primary Care: A Randomized Controlled Trial. *J Prim Care Community Health* 2016;7(2):58-64. doi: 10.1177/2150131915614069 [published Online First: 2015/11/18]
2. Abu Kishk NM. Evaluation of the diabetes campaign for Palestine refugees with diabetes mellitus attending UNRWA health centers. *International Journal of Food Science, Nutrition and Dietetics* 2015;04(7):246-52.
3. Fisher EB, Boothroyd RI, Coufal MM, et al. Peer support for self-management of diabetes improved outcomes in international settings. *Health Aff (Millwood)* 2012;31(1):130-9. doi: 10.1377/hlthaff.2011.0914 [published Online First: 2012/01/11]
4. McNatt ZZ, Freels PE, Chandler H, et al. "What's happening in Syria even affects the rocks": a qualitative study of the Syrian refugee experience accessing noncommunicable disease services in Jordan. *Conflict and health* 2019;13:26. doi: 10.1186/s13031-019-0209-x [published Online First: 2019/06/19]
5. UNICEF. Levels & Trends in Child Mortality. New York, New York, 2015.
6. WHO. Trends in Maternal Mortality: 1990 to 2015. Geneva, Switzerland, 2015.
7. Bank W. Life expectancy at birth, total (years) 2019 [Available from: https://data.worldbank.org/indicator/sp.dyn.le00.in accessed March 26, 2019.
8. Aebischer Perone S, Martinez E, du Mortier S, et al. Non-communicable diseases in humanitarian settings: ten essential questions. *Conflict and health* 2017;11:17. doi: 10.1186/s13031-017-0119-8 [published Online First: 2017/09/22]

9. WHO. World Health Statistics: 2018 Monitoring Health for the SDGs, Sustainable Development Goals. Geneva, Switzerland, 2018.
10. Di Cesare M, Khang YH, Asaria P, et al. Inequalities in non-communicable diseases and effective responses. *Lancet (London, England)* 2013;381(9866):585-97. doi: 10.1016/s0140-6736(12)61851-0 [published Online First: 2013/02/16]
11. WHO. NCD Country Profiles: World Health Organization; 2011 [cited 2011. Available from: http://www.who.int/nmh/countries/2011/syr_en.pdf?ua=1 accessed September 25 2018.
12. Probst-Hensch N, Tanner M, Kessler C, et al. Prevention--a cost-effective way to fight the non-communicable disease epidemic: an academic perspective of the United Nations High-level NCD Meeting. *Swiss Med Wkly* 2011;141:w13266. doi: 10.4414/smw.2011.13266 [published Online First: 2011/09/09]
13. Abujbara M, Batieha A, Khader Y, et al. The Prevalence of Dyslipidemia among Jordanians. *J Lipids* 2018;2018:6298739. doi: 10.1155/2018/6298739 [published Online First: 2018/12/05]
14. Afshin A, Micha R, Khatibzadeh S, et al. The impact of dietary habits and metabolic risk factors on cardiovascular and diabetes mortality in countries of the Middle East and North Africa in 2010: a comparative risk assessment analysis. *BMJ open* 2015;5(5):e006385. doi: 10.1136/bmjopen-2014-006385 [published Online First: 2015/05/23]
15. Khassawneh BY, Samrah SM, Jarrah MI, et al. Prevalence of undiagnosed COPD in male patients with coronary artery disease: a cross-sectional study in Jordan. *International journal of chronic obstructive pulmonary disease* 2018;13:2759-66. doi: 10.2147/copd.S172679 [published Online First: 2018/09/21]
16. Rahim HF, Sibai A, Khader Y, et al. Non-communicable diseases in the Arab world. *Lancet (London, England)* 2014;383(9914):356-67. doi: 10.1016/S0140-6736(13)62383-1 [published Online First: 2014/01/24]
17. Kien VD, Van Minh H, Giang KB, et al. Socioeconomic inequalities in catastrophic health expenditure and impoverishment associated with non-communicable diseases in urban Hanoi, Vietnam. *International journal for equity in health* 2016;15(1):169. doi: 10.1186/s12939-016-0460-3 [published Online First: 2016/10/16]
18. Arokiasamy P, Uttamacharya, Kowal P, et al. Chronic Noncommunicable Diseases in 6 Low- and Middle-Income Countries: Findings From Wave 1 of the World Health Organization's Study on Global Ageing and Adult Health (SAGE). *Am J Epidemiol* 2017;185(6):414-28. doi: 10.1093/aje/kww125 [published Online First: 2017/04/12]
19. WHO. Health promotion and disease prevention through population-based interventions, including action to address social determinants and health inequity [Available from: http://www.emro.who.int/about-who/public-health-functions/health-promotion-disease-prevention.html accessed February 12 2019.
20. Khawaja N, Abu-Shennar J, Saleh M, et al. The prevalence and risk factors of peripheral neuropathy among patients with type 2 diabetes mellitus; the case of Jordan. *Diabetol Metab Syndr* 2018;10:8. doi: 10.1186/s13098-018-0309-6 [published Online First: 2018/02/28]
21. Rabiei K, Kelishadi R, Sarrafzadegan N, et al. Process evaluation of a community-based program for prevention and control of non-communicable disease in a developing country: The Isfahan Healthy Heart Program, Iran. *BMC public health* 2009;9:57. doi: 10.1186/1471-2458-9-57 [published Online First: 2009/02/17]
22. Releford BJ, Frencher SK, Jr., Yancey AK, et al. Cardiovascular disease control through barbershops: design of a nationwide outreach program. *J Natl Med Assoc* 2010;102(4):336-45. [published Online First: 2010/05/05]
23. Rowther AA, Dykzeul B, Billimek J, et al. Computer-Assisted Diabetes Risk Assessment and Education (CADRAE) for Medically Vulnerable Populations in the Middle East: a Novel and Practical Method for Prevention. *Journal of global health perspectives* 2015;2015 [published Online First: 2016/02/03]
24. Alsaleh E, Windle R, Blake H. Behavioural intervention to increase physical activity in adults with coronary heart disease in Jordan. *BMC public health* 2016;16:643. doi: 10.1186/s12889-016-3313-5 [published Online First: 2016/07/28]
25. Nakkash R, Lee K. The tobacco industry's thwarting of marketing restrictions and health warnings in Lebanon. *Tob Control* 2009;18(4):310-6. doi: 10.1136/tc.2008.029405 [published Online First: 2009/07/28]
26. Ranson MK, Jha P, Chaloupka FJ, et al. Global and regional estimates of the effectiveness and cost-effectiveness of price increases and other tobacco control policies. *Nicotine Tob Res* 2002;4(3):311-9. doi: 10.1080/14622200210141000 [published Online First: 2002/09/07]
27. Sarrafzadegan N, Kelishadi R, Esmaillzadeh A, et al. Do lifestyle interventions work in developing countries? Findings from the Isfahan Healthy Heart Program in the Islamic Republic of Iran. *Bulletin of the World Health Organization* 2009;87(1):39-50. [published Online First: 2009/02/07]
28. Amnesty. Living on the margins: Syrian refugees in Jordan struggle to access health care: Amnesty International, 2016.
29. Park PH, Wambui CK, Atieno S, et al. Improving Diabetes Management and Cardiovascular Risk Factors Through Peer-Led Self-management Support Groups in Western Kenya. *Diabetes Care* 2015;38(8):e110-1. doi: 10.2337/dc15-0353 [published Online First: 2015/07/25]

30. Werfalli M, Raubenheimer P, Engel M, et al. Effectiveness of community-based peer-led diabetes self-management programmes (COMP-DSMP) for improving clinical outcomes and quality of life of adults with diabetes in primary care settings in low and middle-income countries (LMIC): a systematic review and meta-analysis. *BMJ open* 2015;5(7):e007635. doi: 10.1136/bmjopen-2015-007635 [published Online First: 2015/07/17]
31. Gyawali B, Mishra SR, Neupane D, et al. Diabetes management training for female community health volunteers in Western Nepal: an implementation experience. *BMC public health* 2018;18(1):641. doi: 10.1186/s12889-018-5562-y [published Online First: 2018/05/23]
32. Sethi S, Jonsson R, Skaff R, et al. Community-Based Noncommunicable Disease Care for Syrian Refugees in Lebanon. *Global health, science and practice* 2017;5(3):495-506. doi: 10.9745/GHSP-D-17-00043
33. Goldstein RA. Introduction to self-management of asthma programs. *Chest* 1985;87(1 Suppl):98S. [published Online First: 1985/01/01]
34. Norris SL, Engelgau MM, Narayan KM. Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials. *Diabetes Care* 2001;24(3):561-87. [published Online First: 2001/04/06]
35. Park S, Buranakitjaroen P, Chen CH, et al. Expert panel consensus recommendations for home blood pressure monitoring in Asia: the Hope Asia Network. *J Hum Hypertens* 2018;32(4):249-58. doi: 10.1038/s41371-017-0025-y [published Online First: 2018/02/02]
36. Ezenwaka CE, Dimgba A, Okali F, et al. Self-monitoring of blood glucose improved glycemic control and the 10-year coronary heart disease risk profile of female type 2 diabetes patients in Trinidad and Tobago. *Niger J Clin Pract* 2011;14(1):1-5. doi: 10.4103/1119-3077.79230 [published Online First: 2011/04/16]
37. Doocy S, Paik KE, Lyles E, et al. Guidelines and mHealth to Improve Quality of Hypertension and Type 2 Diabetes Care for Vulnerable Populations in Lebanon: Longitudinal Cohort Study. *JMIR mHealth and uHealth* 2017;5(10):e158. doi: 10.2196/mhealth.7745 [published Online First: 2017/10/20]
38. Saleh S, Farah A, Dimassi H, et al. Using Mobile Health to Enhance Outcomes of Noncommunicable Diseases Care in Rural Settings and Refugee Camps: Randomized Controlled Trial. *JMIR mHealth and uHealth* 2018;6(7):e137. doi: 10.2196/mhealth.8146 [published Online First: 2018/07/15]