



“Alhamdulillah, they rescued me from confirmed death.”

A Community health volunteer strategy for the management of hypertension and diabetes and COVID-19 detection among Syrian refugees in Jordan

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Community health volunteers provided a critical link to Syrian refugees with noncommunicable diseases at the start of the COVID-19 pandemic.

- ✓ **THE PROBLEM:** Prior to the COVID-19 pandemic, the International Rescue Committee (IRC) clinics prioritized Syrian refugee and vulnerable Jordanian NCD patients at high-risk of developing severe disease (i.e., $\geq 50\%$ had both hypertension and diabetes, 40% had serious comorbidities, and 12% were diabetics dependent on insulin). As Syrian refugees, the cohort was reliant on free medications and insulin and were generally dependent on humanitarian assistance. As the COVID-19 pandemic hit Jordan, IRC clinics were required to close, and the needs of refugees with NCDs became severe and remained unmet.
- ✓ **WHAT WE DID:** Primary care models for non-communicable disease (NCD) management which integrate community health workers have been effective in controlling disease in several low- and middle-income countries.¹ The IRC rapidly-scaled a 'remote' version of a community volunteer (CHV) program for patients with hypertension and/or diabetes based on (1) delivery of medications to local pharmacies and (2) monthly telephone consultation by CHVs (including monitoring of complications, counselling, and COVID-19 preventative messaging and screening of symptoms).

KEY FINDINGS

- ✓ CHVs filled gaps in NCD care that are routinely missed in clinical care (e.g., timely monitoring of complications, self-management, counselling, psychosocial care).
- ✓ A tablet-based CommCare program helped CHVs monitor for stockouts, complications, and needs for referral, psychosocial care, and suspected COVID-19 cases in the household.
- ✓ The program functioned well with $>80\%$ monthly uptake of CHV consultations; 87% remaining in care; 90% monthly medication adherence; $>50\%$ referred for SARS-CoV-2 testing were positive. Most patients retained stable disease control measures by the end of the study.
- ✓ Aligned with WHO guidelines, CHVs were embedded in a supportive and integrated primary care program that included clinics and pharmacies.² However, urgent referrals to secondary care were extremely constrained and handled on an emergency, ad-hoc basis.
- ✓ The program was cost-efficient (INT 218 per patient per year compared with INT 209 for a single primary care consultation)³

KEY RECCOMENDATIONS

- ✓ CHV programs must be well-integrated into the health system.² For efficiency particularly in humanitarian settings, CHV programs for NCDs can focus on high-risk patients (e.g., elderly, poor mobility, poor control, comorbid disease). For more stable patients, CHVs can deliver foundational health education on a less frequent basis.
- ✓ Given the relatively small number of urgent referrals to hospitals in this study, it may be cost-efficient to financially support referrals and position CHVs to coordinate referrals.
- ✓ Remote CHV strategies are relevant for future COVID-19 waves, as well as any sudden disruptions that cuts off access to services.⁴ CHVs provided refugees with a continuous linkage to NCD management, and COVID-19 detection and testing.
- ✓ The study produced recommendations for remote CHV programming during a period of instability. The lack of a household visit means that a more comprehensive program (with in-person counseling, biological monitoring, and visual detection of complications) still requires evaluation among refugees in this context.



Picture: CHV carrying out an in-person household visit at the start of the study in February 2020, (before the COVID-19 pandemic)

- ✓ Assuring continuous care for NCDs in humanitarian settings will remain constrained by resources.⁵ CHV programs can be cost-efficient with fewer human resources spent on a smaller set of patients. **CHV programs must be well-integrated into the health system. For efficiency particularly in humanitarian settings, CHV programs for NCDs can focus on high-risk patients (e.g., elderly, poor mobility, poor control, comorbid disease).**
- ✓ These patients had the most to gain from monthly consultations but required considerable follow-up in the study. These patients also had worse outcomes at the end of the study period.
- ✓ Foundational education on diagnoses is a gap in primary care, particularly for those diagnosed in a host country after displacement.⁶ **For more stable patients, CHVs can deliver foundational health education on a less frequent basis.** (e.g., 3 visits per year for self-management protocols; recognition of danger signs and complications; promotion of physical activity; counselling on diet; psychosocial care).
- ✓ There is no clear policy or funding stream for secondary care for refugees. **Given the relatively small number of urgent referrals to hospitals in this study, it may be cost-efficient to financially support referrals and position CHVs to coordinate referrals.**
- ✓ Access to secondary care and laboratory testing is highly fragmented for refugees. **Primary care can integrate the detection of simple complications (e.g., diabetic foot) by CHVs and management and classification of urgent and non-urgent referrals.** Other interventions with promising results include supplementing community care with conditional cash transfers to broaden the choice of expenditures for secondary care.⁷

EXPANDED RECCOMENDATIONS FOR REMOTE SUPPORT FOR NCDs DURING THE INTENSIFICATION OF COVID-19

- ✓ **With sufficient training and technological resources, CHVs can switch from household visits to remote care by phone.** Key factors included pre-training on remote counselling; use of the CommCare program to link CHVs, supervisors, and clinics; and sufficient supervision staff to manage quality, scale-up, and systematic referral.
- ✓ **CHVs provided refugees a continuous linkage to SARS-CoV-2 testing and COVID-19 preventative information from a trusted source through ongoing discussion and messaging presented visually (see Whatsapp messages on right)**

Although there is no gold standard for evaluation of the sensitivity of case detection (i.e., we do not know how complete it was), CHVs successfully referred patients to testing at a rate like that of other community surveillance programs.⁸

Half of all referred cases had a PCR-positive result. CHVs could also immediately facilitate household infection prevention in the households of suspected cases.

- ✓ **Remote CHV strategies are relevant for future COVID-19 waves, in addition to sudden disruption to care that cuts off access to patients.** This is akin to programs to reach HIV/AIDS patients cutoff from care due to acute conflict.⁴



Pictures: COVID-19 (top) and health education messages about NCD danger signs (bottom) delivered by CHVs via Whatsapp



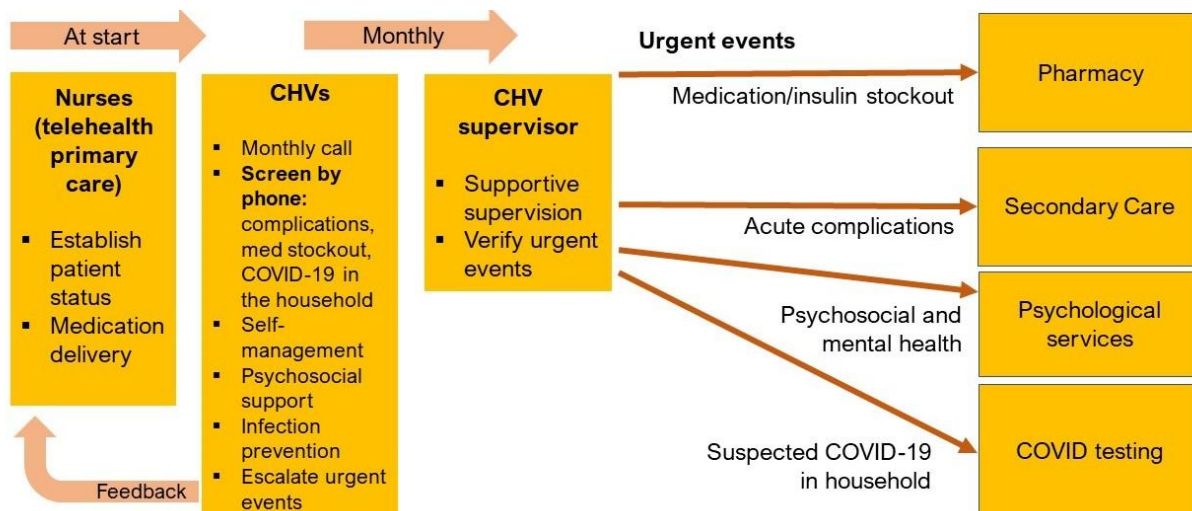
THE CHV INTERVENTION AND THE STUDY

Diabetes and hypertension cause significant morbidity and mortality among Syrian refugees and vulnerable Jordanians, much of it preventable with adherence to medication, lifestyle modification, and appropriate referrals to care when complications arise.³ The availability of NGO-supported primary health care is regularly insufficient, as patients struggle with optimal management of their disease. Increasing pressures on clinicians limit their ability to adequately counsel and support patients during short encounters in primary care clinics.

WHAT WE DID

CHVs trained in the monitoring of NCDs supported Syrian refugees and vulnerable Jordanians with diabetes and hypertension during the COVID-19 pandemic. Given the need for community prevention of transmission among refugee communities who were cut-off from the health system during the lockdown period, CHVs educated NCD patients on how to avoid COVID-19 infection, screened for COVID-19 symptoms, and referred suspected COVID-19 cases to testing sites.

Picture: CHV, nurse, and supervisor activities during the COVID-19 pandemic



RESEARCH METHODS

From July 2018 to April 2021, we carried out the following mixed-methods research studies:

- ✓ A **Household survey** to estimate the burden of hypertension and diabetes and access to care among Syrian refugees and vulnerable Jordanians living in Mafrq and Ramtha.⁹

✓

- ✓ A **participatory workshop (“casual loop analysis”)** to discuss this data and evidence to identify how CHVs can support Syrian NCD patients.¹⁰
- ✓ **Development of a CHV-NCD intervention and electronic data system.**¹¹
- ✓ A **cohort study and qualitative research** to evaluate the remote version of the program, with COVID-19 detection added.¹²

EXPANDED RESEARCH FINDINGS



Picture: Co-designing the CHV-NCD program

CHV PRACTICES

- ✓ **The burden of disease among refugees is high.** In the household survey among persons ≥ 30 years, the biologically based prevalence was high (39.5% for hypertension, 19.3% for diabetes, and 13.5% for both conditions) and risk factors severe (57.4% had ≥ 1 complication, 82.8% were obese/overweight, 49.1% sought care in the past month, and 26.8% missed their medications in the past week).⁹
- ✓ In the participatory workshop, key players in CHV programming in Jordan (e.g., IRC, MOH, UNHCR, Royal Health Awareness Society, MSF etc.) recommended that CHVs provide psychosocial support, foundational health education, self-management support, and adherence monitoring.¹⁰
- ✓ In the study of the remote intervention, CHVs provided services to a large clinical cohort of 1124 patients with hypertension and/or

diabetes living in Ramtha and Mafraq, at the start of the COVID-19 pandemic in Jordan.¹²

- ✓ Despite the challenges of the pandemic, a majority (87.2%) stayed in the program. Self-reported adherence to medication was 90%. Patients' disease outcomes remained stable during this period despite the pandemic, with stable blood pressure and blood sugar at the end of the study (not yet published).
- ✓ The cost of this program was low: a total of INT\$218 per patient per year. This is comparable to the cost of one primary care consultation for a Syrian refugee with an NCD in Jordan (INT\$209-253 per year).
- ✓ Through qualitative research, we found that CHV programs work best when well embedded in a supportive, fully functional, and integrated health delivery program that includes clinics, pharmacies, and access to appropriate referrals.^{2,6}

For example, primary care for complications needs to be responsive to demands placed by increased detection of acute complications (and their worsening) by CHVs.

COVID-19 DETECTION AND TESTING

- ✓ Those who screened positive for potential symptoms of COVID-19 were referred for testing and CHVs discussed quarantine and other preventative measures with the patient and his or her household.
- ✓ **More than half of the patients referred by the CHVs to testing incurred a PCR-positive test result.** CHVs successfully screened for suspected COVID-19 among an elderly, sicker population at high risk for complications of the disease.
- ✓ COVID-19 detection produced a naïve incidence of symptomatic suspect cases of 2.3/1,000 persons during the study period, comparable to other community detection systems in Thailand.⁸

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Acknowledgements

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