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Addressing noncommunicable diseases in emergencies: a regional framework for action

Executive summary

The Eastern Mediterranean Region is experiencing an unprecedented level of emergencies caused by both natural and human-made hazards, affecting the health of millions of people. Emergencies disrupt health systems, making it challenging to provide adequate health care services, leading to increased morbidity and mortality from noncommunicable diseases (NCDs). Almost half the Region's 22 countries and territories are considered fragile, conflict-affected and vulnerable. However, no country is immune to emergencies, and events such as natural disasters, military conflict, displacement and even mass gatherings can disrupt NCD care delivery. Currently, the Region has the largest number of people in need of humanitarian assistance globally, accounting for 38% of the total, and hosts the highest number of displaced individuals worldwide.

Health emergency response has a long-standing focus on addressing immediate health needs, such as through trauma management and communicable disease control. Despite the increasing burden of NCDs and the negative impact of emergencies and crises on the morbidity and mortality they cause, NCDs have yet to be fully integrated into most national health emergency preparedness and response agendas. The COVID-19 pandemic has emphasized the vulnerability of NCD service continuity during crisis. The pandemic disrupted essential NCD services globally as well as in the Region, with some countries experiencing service interruptions for more than 12 months.

Ensuring the management of NCDs during emergencies involves maintaining the continuity of NCD services and medications, ensuring specialized care for conditions like dialysis-dependent renal failure and cancers, as well as addressing acute complications such as heart attacks and strokes. This comprehensive approach requires an action-oriented and holistic strategy that spans emergency risk reduction, preparedness, response and recovery. This approach is driven by an intensified commitment to providing high-quality health care services to those affected by NCDs.

This paper outlines a proposed regional framework aligned with WHO's work in health system strengthening and across the humanitarian programming cycle. The framework encompasses a set of prioritized strategic interventions and indicators that will provide the quickest progress and highest return on investment across five domains: (i) leadership, coordination and advocacy; (ii) resource mobilization and financing; (iii) continuity of health services: (iv) information, data, research and digital health; and (v) community engagement and trust building.

The key recommendations of the paper invite Member States to:

1. Recognize the increasing burden of NCDs during emergencies and integrate NCDs into national emergency preparedness and response strategies and plans.

2. Strengthen coordination and collaboration among all stakeholders (including civil society) to effectively prioritize NCDs in emergency efforts, according to an all-hazard approach that addresses the specific health needs related to NCDs.

3. Secure sufficient funding for NCDs during emergencies, ensuring that health care systems are resilient enough to provide the necessary support.

4. Ensure access to essential NCD care, by adapting service delivery models and expanding primary care services, incorporating digital innovations to enhance health care access.

5. Enhance data collection, monitoring and evaluation systems to better understand the prevalence, risk factors and outcomes of NCDs in emergencies and to guide evidence-based interventions.

Introduction

1. Recent large-scale events resulting from natural and human-made hazards in various countries in the Eastern Mediterranean Region have underlined the fact that no country is immune to emergencies and disasters (*1*). A health emergency is defined by WHO as a type of event or imminent threat that produces or has the potential to produce a range of health consequences, and which requires coordinated action, usually urgent and often non-routine (*2*).[1] Direct health consequences of emergencies include trauma-related deaths and disability, gender-based violence and mental disorders. Recent years have demonstrated the detrimental health consequences of emergencies and disasters caused by both natural hazards, such as floods in Pakistan, earthquakes in the Syrian Arab Republic, and by conflicts and political fragility in several countries in the Region.

2. The Region is highly diverse. It is home to 38% of those who need humanitarian assistance globally, the highest proportion for any WHO region (*3*). According to the World Bank (*4,5*), nearly half of the 22 countries and territories in the Region are classified as being fragile, conflict-affected and vulnerable (FCV), including Afghanistan, Djibouti, Iraq, Lebanon, Libya, Pakistan, Palestine, Somalia, Sudan, the Syrian Arab Republic and Yemen. Additionally, the Region hosts the largest number of forcibly displaced people globally (*6*). In 2018, one out of every six people in Lebanon and one out of every 14 people in Jordan were refugees (*7*).

3. Disruption of health systems contributes to increased morbidity and mortality from infectious diseases, malnutrition, obstetric complications and noncommunicable diseases (NCDs). Emergencies have become increasingly protracted and complex, impacting health systems by increasing the burden of disease and therefore the demand on health services, while simultaneously disrupting and diminishing the ability to meet that demand.

4. Ensuring the inclusion of NCDs in emergency response should be recognized as a critical part of health services and a fundamental human right, aligning with the United Nations' dedication to guarantee access to high-quality health care services, including NCD prevention, treatment and care. These measures are outlined in international human rights laws, are targets of the Sustainable Development Goals and are included in the Sphere Minimum Standards for Humanitarian Response (*8*).

5. In the Eastern Mediterranean Region, NCDs (including cardiovascular diseases, dialysis-dependent kidney failure, diabetes, cancer and chronic lung diseases) are the leading cause of premature mortality. However, NCDs have not been formally included in most national health emergency preparedness and response agendas in the Region. At the same time, decades of protracted conflicts in the Region, evolving health profiles and the needs of forcibly displaced populations call for a holistic NCD response to be developed and widely integrated as part of an all-hazards approach to emergency preparedness and response, whether in the affected region, along evacuation routes, at border crossings or in areas of displacement, both within an affected country and in neighbouring nations. The experience of WHO and of other humanitarian partners in providing technical assistance in countries experiencing emergencies should be further analysed and capitalized on to build to create an all-inclusive NCD approach in FCV settings.

6. In addition to the disruption of health systems, there are several ways in which excess mortality and morbidity in emergency settings are associated with NCDs. These include: (i) discontinuation of care caused by the disruption of medical supplies, inaccessible health care providers or damaged health infrastructure; (ii) a sudden shift in priorities of the health care system; (iii) changes in living conditions resulting in a change in diet and physical activity habits; (iv) increasing risk of exacerbations of pre-existing conditions; and (v) increased stress in emergency settings affecting the control of NCDs (*9*).

[1] UNHCR declares an internal emergency when faced with a humanitarian crisis for which the government and/or the Organization lack the capacity on the ground to respond.

7. This paper provides a technical situation analysis and introduces a regional framework for action to guide policy-makers, planners and health care professionals responsible for emergency response and preparedness, with the goal of improving the health outcomes of people living with NCDs during acute and protracted crises. The framework aims to integrate NCD interventions within national health emergency response plans, based on best practices and the discussions that took place during the WHO global and regional technical meeting on addressing NCDs in emergency settings held in December 2022 (*10*), as well as the valuable input received during a consultative meeting with Member States held in June 2023.

Global and regional commitments to supporting NCDs in emergency settings

8. Support for NCDs has been recognized as a standard of care in emergency settings by the Sphere Standards for almost 20 years. The Sphere Standards are a set of principles and minimum standards for humanitarian response that aim to improve the quality and accountability of assistance provided to people affected by crises. They provide guidance on how to prevent and manage NCDs among crisis-affected populations, such as ensuring access to essential medicines, equipment and services, providing health education and counselling, and coordinating with other sectors and actors (*8*).

9. The WHO global action plan for the prevention and control of NCDs 2013–2030 urges Member States to ensure the continuity of essential NCD services, and WHO to support the availability of life-saving technologies and essential medicines in humanitarian emergencies. The political declaration of the third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases in 2018 reaffirmed Member States' commitment to "strengthen the design and implementation of policies, including for resilient health systems and health services and infrastructure to treat people living with non-communicable diseases and prevent and control their risk factors in humanitarian emergencies" (*11*).

10. In 2022, an implementation roadmap 2023–2030 for the global action plan for the prevention and control of NCDs 2013–2030 was adopted by the Seventy-fifth World Health Assembly, which includes actions related to emergency settings. The Health Assembly also adopted, in decision WHA75(11), the recommendations of the Director-General on how to strengthen the design and implementation of policies, including those for resilient health systems and health services and infrastructure, to treat people living with NCDs and to prevent and control their risk factors in humanitarian emergencies (*12*). This includes the integration of NCDs in the essential health service list in emergencies and building longer-term NCD emergency preparedness and response capacities during and after the COVID-19 pandemic, as part of a build back better approach that is multisectoral and considers all hazards.

11. In addition, resolution EM/RC68/R.2 of the 68th session of the Regional Committee for the Eastern Mediterranean invited Member States and the Regional Director to integrate health emergency preparedness into health system strengthening to achieve the twin goals of health security and universal health coverage (UHC) by developing a plan of action for accelerating health emergency preparedness and response in the Region.

12. The international response to humanitarian emergencies is usually coordinated through the Inter-Agency Standing Committee's cluster system, with WHO as the lead agency for the Health Cluster. There are currently eight active health clusters across the Region, with over 700 operational partners. Such partners have a strong field presence and can extend the reach of health services, including NCD care.

13. Furthermore, targeted initiatives in collaboration with health clusters at country level aim to address NCDs in humanitarian emergencies and to alleviate suffering and save lives in emergency situations. Specific projects are being scaled up in Afghanistan, Iraq, Sudan, the Syrian Arab Republic and Yemen to improve the availability and quality of NCD-related services in these countries (*1*).

14. WHO has identified priorities for improving the collective health emergency response through assisting countries to undertake all-hazards risk profiling, develop emergency preparedness plans,

establish emergency operations centres and apply an incident management system. WHO also recommends supporting the development of national action plans for health security.

Noncommunicable disease burden during emergencies in the Eastern Mediterranean Region

15. The Eastern Mediterranean Region is facing a major burden of NCDs, which are responsible for the majority of deaths in most countries of the Region. The prevalence of NCDs in the Region is high, with an estimated 66.5% of deaths attributed to them. The Region reports one of the highest probabilities of premature mortality (i.e. death before the age of 70), which stands at 24.5%; Afghanistan has the highest probability at 35%, followed by Somalia (30%), Pakistan (29%), Egypt (28%) and Yemen (27%) (Fig. 1) (*13*).

16. Emergencies appear to increase the risk of NCD-related complications; events such as heart attacks and strokes may be up to 2–3 times more common than in normal pre-emergency circumstances (*14*). In the Region, cardiovascular diseases (CVDs) are the leading cause of NCD-related deaths in both FCV and non-FCV countries, followed by cancers and chronic respiratory diseases (Fig. 2). However, the proportion of deaths from CVDs is higher in FCV countries than in non-FCV countries. According to data from the WHO Global Health Observatory (2019), the age-standardized CVD mortality rate was significantly higher in FCV countries (376 per 100 000 population) than in non-FCV countries (290 per 100 000 population), with men being more likely to die than women (*14,15*).

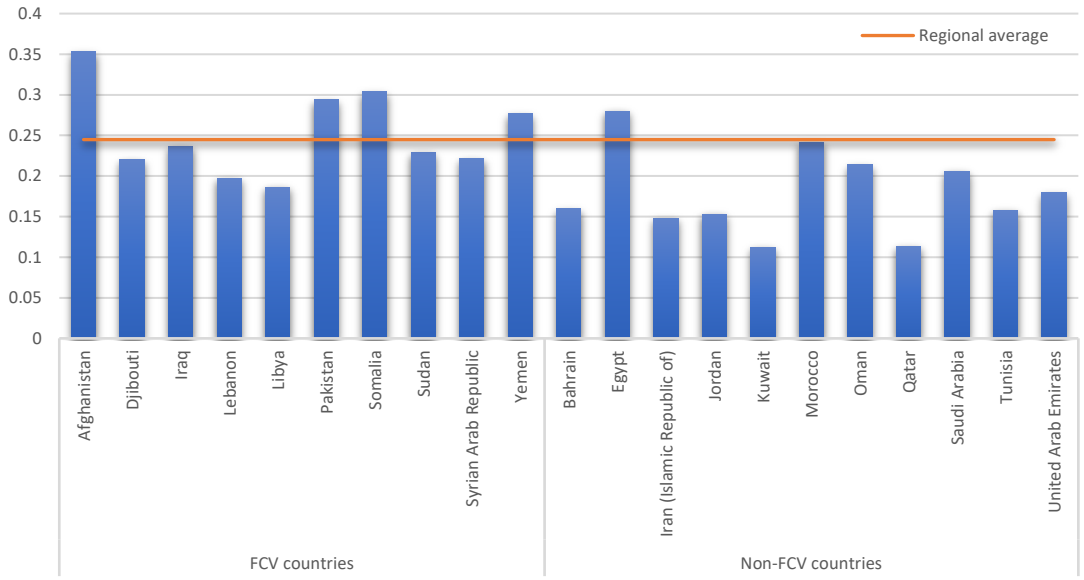

Fig. 1. Probability (%) of premature mortality due to NCDs in countries of the Eastern Mediterranean Region, by country group, 2019 *(13)*[1]

[1] Note: data for Palestine are not included.

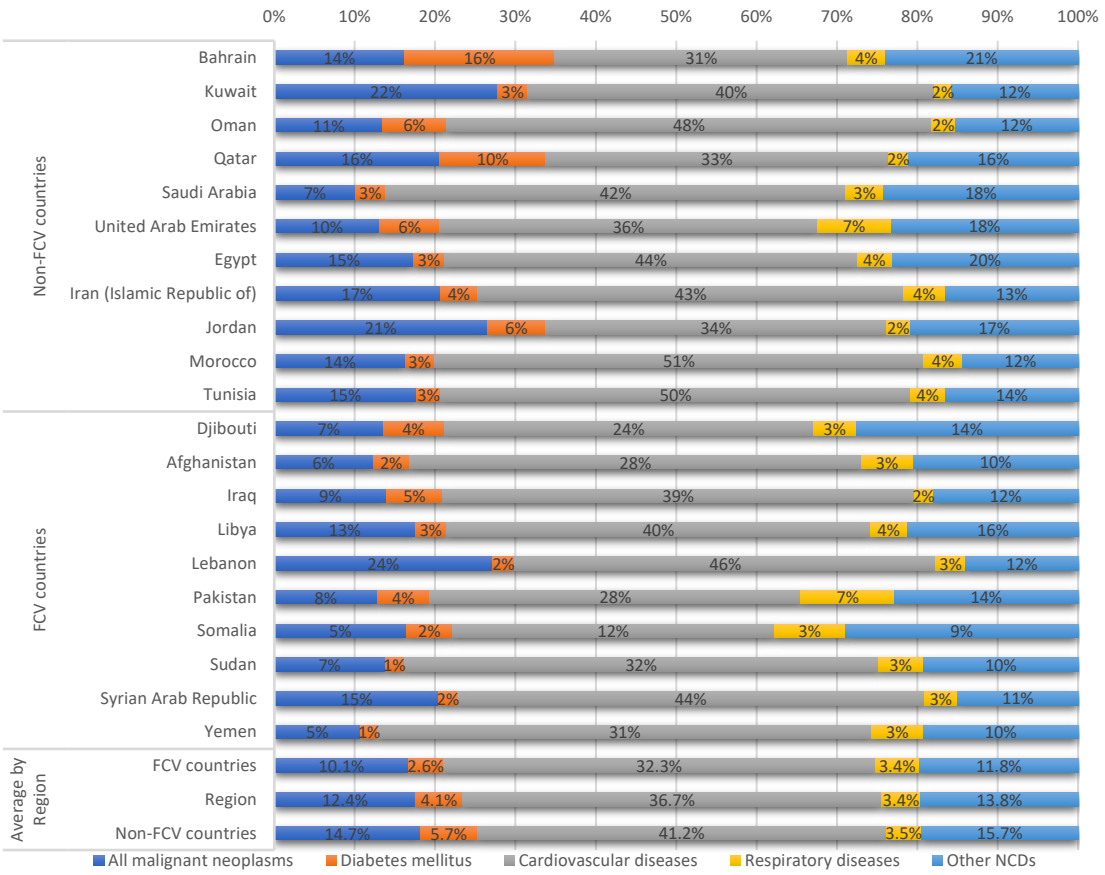

Fig. 2. Proportional NCD mortality in FCV versus non-FCV countries in the Region, 2019[1]

17. In emergency settings in the Region, the prevalence of hypertension – the main risk factor for CVD is above average, affecting 39.3% of adults aged 30 to 79 years. This was evident for Iraqi refugees in Jordan, among whom hypertension was the most diagnosed NCD (*15*). A systematic review (*16*) found a higher prevalence of CVD among refugees compared with non-refugees in the same places. Managing blood pressure remains a major challenge, with data indicating that 50% of adults with hypertension are unaware of their condition. In emergency countries, only 37% of those diagnosed with hypertension receive antihypertensive medication compared with 45% in non-emergency countries, and only 15% of diagnosed people achieve blood pressure control, as opposed to 22% in non-emergency settings (*13*).

18. Cancer accounts for approximately 10% of all NCD-related deaths (Fig. 2). Cancer incidence is expected to increase by 49% in the next 15 years. The average cancer age-standardized death rate in the Region is 89.93 per 100 000 population *(17,18)*. FCV countries in the Region seem to have a higher cancer death rate (93.13) compared with non-FCV countries (86.83). Further, the likelihood of surviving cancer is lower in countries affected by emergencies, given the mortality-to-incidence ratio in FCV countries (0.67) compared to non-FCV countries (0.59).[2] Additionally, a significant proportion of cancer cases are not diagnosed, or are diagnosed at a late stage, because of inadequate access to health care and referral systems. The excess mortality is also a result of insufficient cancer medications and radiotherapy during emergencies.

[1] Data from: Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2021 country capacity survey in the Eastern Mediterranean Region. Cairo: WHO Regional Office for the Eastern Mediterranean (in press). Note: data for Palestine are not included.

[2] The mortality-to-incidence ratio (MIR) is calculated by dividing the number of deaths for a selected cancer type in a given year by the number of newly diagnosed cases for that cancer in the same year. The MIR is generally used as a high-level comparative indicator of inequities in cancer outcomes. Due to its simplicity (it is calculated by dividing the mortality count by the incidence count in a given year), it allows a prompt international comparison of survival across countries due to the ready availability of incidence and mortality data for most countries.

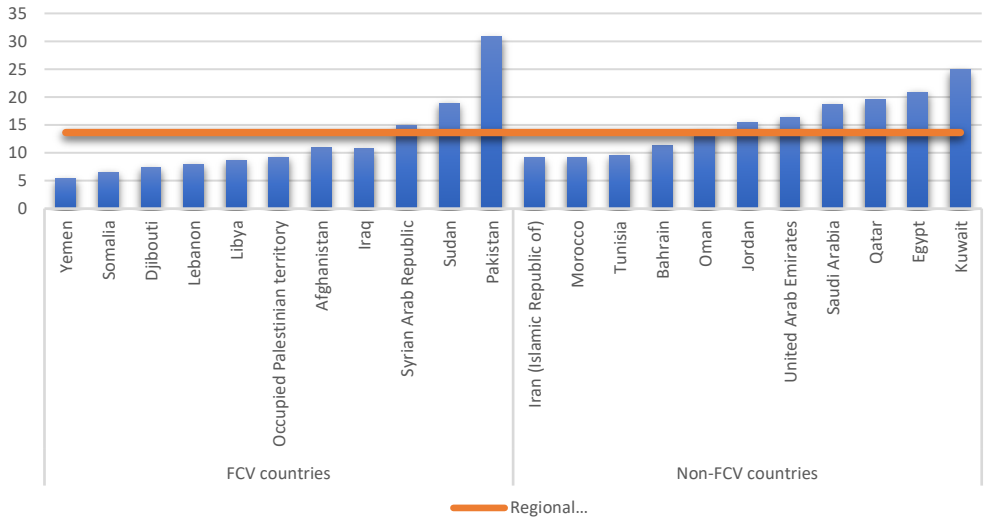

Fig. 3. Age-adjusted comparative diabetes prevalence (%) in adults aged 20–79 years[1]

19. Diabetes is a major health issue that has reached alarming levels. The Region had the highest percentage (24.5%) of diabetes-related deaths in 2021 among all WHO regions. While, in general, high-income countries have a higher diabetes age-standardized prevalence in the Region, the highest comparative diabetes prevalence regionally and globally in 2021 was reported in Pakistan (30.8%), which had the highest proportion of deaths under the age of 60 due to diabetes (*19*). The burden of diabetes in FCV countries within the Region is influenced by several factors unique to these settings. The data demonstrate a wide range of diabetes prevalence in emergency countries, from as low as 5.4% in Yemen to 30.8% in Pakistan (Fig. 3) (*19*). One in three people living with diabetes in the Region is undiagnosed, which might lead to delays in treatment and an increased risk of complications, such as blindness, kidney failure and heart disease.

20. End-stage renal disease is one of the major complications of diabetes and hypertension that requires dialysis or a kidney transplant for survival. In emergency settings, these patients face increased risks of medical complications and mortality due to limited and uneven access to dialysis. The International Society of Nephrology reports estimates that about 8000 people in crisis-affected Sudan depend on dialysis to live (*20*). In Afghanistan, only one dialysis centre operates in each of the 15 provinces, and most patients are referred to the only advanced centre, which provides 90% of the medical services for end-stage renal disease patients but faces severe shortages of machines, staff and materials (*21*).

21. Several studies demonstrate the strong link between humanitarian settings and increased incidence of asthma exacerbations (*22*). The average age-standardized death rate for chronic respiratory disease is higher in FCV countries, which have a rate of 44.66 deaths per 100 000 population, compared with non-FCV countries, which have 35.20 per 100 000 population (*13*). During the initial weeks of emergencies, studies report two- to threefold increases in asthma attacks and asthma-related conditions (*23*). This underlines the potential challenges that emergency countries may face in managing chronic respiratory disease, such as higher levels of pollution, limited access to health care and inadequate resources for disease prevention and management.

22. Evidence has shown that people living in emergencies are more exposed to modifiable risk factors such as tobacco, alcohol, unhealthy diet, insufficient physical activity and environmental pollution (*13*). Some countries in the Region exhibit a high prevalence of tobacco smoking among men, with more than 40% of the male population in Afghanistan, Iraq and Lebanon being smokers.

[1] Data from: IDF Diabetes Atlas *(19)*.

23. Health care in the Region faces frequent and severe attacks that endanger the lives of health workers and patients. Just in the first month of 2023, there were 13 reported attacks on health care in the Region – 56% of the global total *(24)*. In the Syrian Arab Republic, health facilities were attacked every four days in 2019, and 847 medical personnel were killed between 2011 and 2017 *(25).* In Sudan, as of May 26, 14 health workers and one medical student were believed to have been killed during the conflict, while 20 government and private hospitals had been looted *(26).* These attacks disrupt the continuity and quality of care for NCDs and contribute to the emigration of health workers from the Region to other countries. Lebanon has lost almost 40% of its doctors and 30% of its nurses since 2019 due to the economic crisis *(27)*. The UK and Ireland registered thousands of doctors from countries in the Region, such as Egypt, Iraq, Libya, Pakistan, Sudan and the Syrian Arab Republic, between 2017 and 2021 (*28,29*).

24. People living in emergency settings often suffer from malnutrition, which has various forms. Acute and chronic malnutrition often affect children, while other subgroups may face undernourishment, micronutrient deficiencies or overweight, obesity and diet-related NCDs (such as heart disease, stroke, diabetes and some cancers) (*30*).

Cost of NCDs in emergency and humanitarian settings

25. The cost of NCDs in emergency and humanitarian settings can be significantly higher due to the added challenges of providing health care in such situations. For instance, according to some studies, the cost of treating Syrian refugees with chronic health conditions in Jordan was significantly higher than the cost of treating the same conditions in non-refugee populations (*31*). The average monthly cost per person with CVD was US$ 25.2 for Syrian refugees and US$ 8.9 for non-refugees. For diabetes, the average monthly cost per person was US$ 23.7 for Syrian refugees and US$ 8.2 for non-refugees.

26. In the Region, evidence to explore the cost of NCDs in crisis is scarce. According to a recent report on the economic burden of diabetes in the Region, diabetes cost the emergency countries and territories of the Region (Afghanistan, Djibouti, Iraq, Lebanon, Libya, Pakistan, Palestine, Somalia, Sudan, Syrian Arab Republic, Yemen) the equivalent of an average of 1.54% of their GDP in 2019 (WHO Regional Office for the Eastern Mediterranean, The economic burden of diabetes in the Eastern Mediterranean Region, unpublished report, 2021). In Pakistan, which carries the highest burden of diabetes in the Region, the cost of diabetes amounts to 2% of the country's GDP, approximately US$ 5.6 billion. Included in this is the cost of premature death, which in the case of Pakistan is equivalent to US$ 390 million.

27. Individuals in emergency countries often seek medical attention at a later stage of their illness compared with those in non-emergency countries, leading to progression and complications that increase costs for both the individual and the health care system. Evidence indicates that treating patients with three or more diabetes complications costs four times as much as treating diabetes without complications (*32*). Diabetes complications are more likely to occur if patients cannot access medicines and treatment and are a result of elevated glucose levels. High costs are often associated with renal transplantation, haemodialysis, cardiovascular events and amputations (*33*). Additionally, out-of-pocket payments increase with diabetes-associated complications (*34*).

28. Other studies have shown that high out-of-pocket payments pose challenges to accessing care for populations affected by emergency. In 2016, Syrian refugees in Jordan reported more than 50% of households had out-of-pocket expenditures associated with NCD services and that such expenditures averaged US$ 39.9 per affected household, which represented a significant barrier to accessing care (*31,35*).

29. In the Region, the NCD kit has been deployed in several countries facing humanitarian crises, such as Afghanistan, Libya and the Syrian Arab Republic. Between January 2022 and March 2023, a total of 390 NCD kits were distributed in these three countries, at a total cost of more than US$ 2 million.

COVID-19 pandemic

30. The COVID-19 pandemic has brought to the forefront the interconnection between NCDs and infectious diseases. It has emphasized the importance of protecting individuals against NCDs and their risk factors to bolster resilience against various other health conditions. Moreover, the pandemic has exacerbated pre-existing inequalities in the management and provision of NCD care, further emphasizing the need for concerted efforts to address these disparities (*36*).

31. The COVID-19 pandemic has caused significant global excess deaths, which is the difference between the observed and expected number of deaths in a given time. The global excess deaths associated with COVID-19 were estimated to be 14.9 million in 2020 and 2021. Those excess mortality includes deaths associated with COVID-19 either directly due to the disease itself, or indirectly as a result of the pandemic's impact on health systems and society *(37*).

32. According to the WHO pulse surveys,[1] the provision of NCD services has been severely affected by the COVID-19 pandemic and its control measures in almost all countries around the world. On average, 45% of essential services for NCDs have been disrupted. The services that have suffered the most are rehabilitation, palliative care, cancer care, community care and mental health services (*38*). In the Region, most countries and territories have experienced severe disruption to their NCD services. In 10 of the 19 countries surveyed by WHO in mid-2020, services for hypertension treatment and urgent dental care were partially or completely disrupted; in nine, those for rehabilitation, palliative care and asthma; and in eight, those for diabetes and cancer management (Fig. 4) *(39)*. Countries and territories that faced disruption included both those affected by other emergencies and those where COVID-19 was the only emergency.

33. The duration of the disruption of essential services ranged from 3 to 6 months in most countries and territories, but some experienced more than a year of disruption. Specialized care for cardiovascular diseases and cancer screening were severely affected, with many countries and territories only providing emergency care or suspending such services completely (WHO Regional Office for the Eastern Mediterranean, Maintaining essential NCD services during the COVID-19 pandemic in the Eastern Mediterranean Region, unpublished report, 2021). Services that were already weak before the pandemic faced the greatest challenges. Some countries and territories took actions to mitigate the disruption, such as adapting service delivery models, expanding digital health solutions and engaging communities.

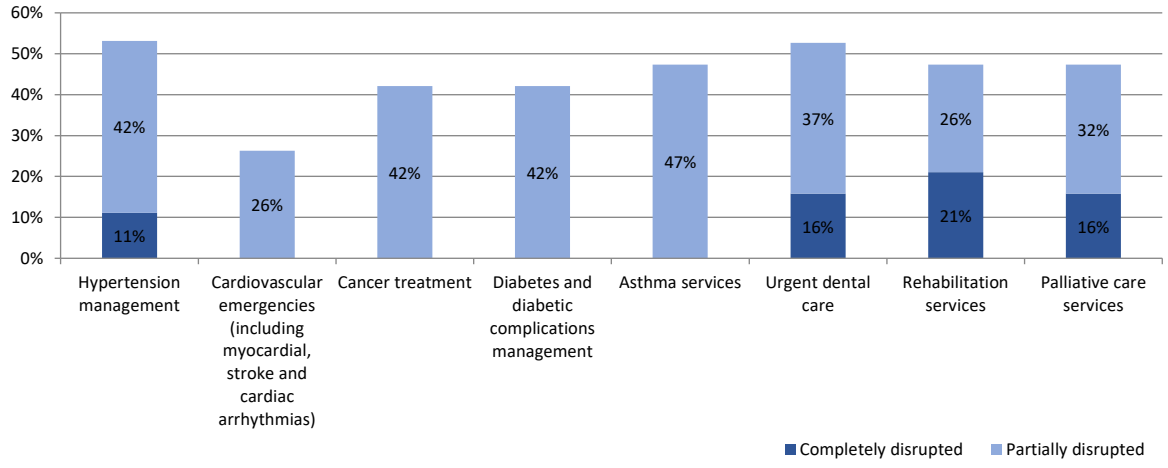

Fig. 4. Percentage of countries in the Region reporting that NCD services were either partially or completely disrupted

[1] The pulse survey is a global initiative by WHO to monitor the impact of COVID-19 on essential health services and guide mitigation and recovery efforts. It has been conducted in several rounds, covering different aspects of health service delivery and utilization.

34. WHO developed a guidance note on prioritizing and planning essential health services during the COVID-19 response in humanitarian settings *(40)*. More efforts are underway to develop an evidence-based minimum package of services (including for NCDs) that are relevant and feasible for humanitarian settings, based on the WHO UHC compendium.

Overcoming barriers: Health system response in addressing NCDs in emergencies

35. There are many barriers to delivering NCD services in the different emergency phases. Some of these barriers are related to the context of the emergency, such as competing priorities, insecurity and access constraints. Others are related to the capacity and performance of the health system, such as weak government capacity and limited donor financing, bureaucratic impediments, high turnover among health authorities, disruptions of health infrastructure and programmes, interrupted supply chains and health workforce shortages. These barriers limit the effective management of NCDs and compromise the quality and safety of care for people living with them.

36. Managing NCDs in fragile states and crisis-affected populations presents a challenge for countries and humanitarian actors, with enormous competing needs and limited resources. NCD essential health services cannot be safely provided or accessed unless they are prioritized in preparedness and response plans or widely made available and subsidized as part of national health benefit packages.

37. One of the main challenges for addressing NCDs in emergencies in the Region is the inadequate preparedness and capacity of the health systems prior to crisis. Many health systems lack the necessary policies, resources, infrastructure, workforce and information to prevent and manage NCDs effectively before an emergency occurs. As a result, they are unable to cope with the increased demand and complexity of NCD care during and after an emergency. Therefore, it is important to inform all stakeholders about the importance of including NCDs in preparedness and response plans for emergencies, and to integrate NCD services into the primary health care system as part of a comprehensive approach to health system strengthening (*41,42*).

38. To better integrate NCD management into primary health care, WHO promotes the development of models of care, delivery mechanisms and partnerships to deliver integrated evidence-based, patient-centred care and works closely with ministries of health, professional associations and other partners supporting the development and implementation of evidence-based guidelines and protocols for the integrated management of NCDs, mainly at the primary health care level. This is essential to building health systems that are resilient and responsive during emergencies. Member States have made considerable progress in mainstreaming NCDs at the primary health care level. For instance, the WHO HEARTS technical package is being implemented in several FCV countries and territories (Djibouti, Palestine, Pakistan, Sudan and Yemen) to improve access to cost-effective prevention, treatment and care interventions for CVDs and diabetes. Recently, Djibouti, Iraq, Lebanon, Libya, Pakistan and Yemen have reported having developed or updated evidence-based national guidelines and protocols for the management of NCDs (hypertension, diabetes and CVD risk assessment) at the primary health care level.

39. During emergencies, a lack of reliable access to NCD medications, including insulin, is common (*43,44*). To address this, WHO has supported the procurement and deployment of the NCD emergency kit to several countries in the Region, such as Afghanistan, Iraq, Libya, Pakistan, Syrian Arab Republic, Sudan and Yemen, including during the COVID-19 pandemic, focusing primarily on the most common NCDs amenable to primary health care management (hypertension and CVD, diabetes, chronic respiratory diseases and selected mental health and neurological conditions).

40. The Interagency Emergency Health Kit is the most widely used emergency kit for providing essential health care in humanitarian crises. However, it has a limited range of drugs and devices for managing NCDs, which affect people in emergencies more severely (*45*). To address supply chain disruption and restore essential NCD services, WHO developed a more comprehensive and specialized kit for NCDs in

2016 that can potentially be used as a first attempt towards restoring and deploying essential NCD services. The kit is based on the needs of the countries in the Region and aligned with WHO's Package of Essential Noncommunicable Disease Interventions (WHO PEN) (*46*). The kit contains critical medicines such as insulin, essential diagnostic equipment, renewable supplies and comprehensive treatment guidelines. It is designed to cover the needs of 10 000 people for three months and can be adapted to different contexts. The kit is widely used across the Region and in other WHO regions.

41. Further, chronic kidney disease patients often suffer severe shortages of treatment during emergencies. WHO, together with other international organizations and nongovernmental organizations, is actively supporting dialysis in crisis zones. In Yemen, at the start of the pandemic, up to 110 340 dialysis sessions were provided to more than 4300 patients with chronic kidney disease (*47*). Moreover, the north-west of the Syrian Arab Republic has approximately 800 patients diagnosed with end-stage renal disease who require dialysis treatment to survive. The destruction of public facilities in this area has forced various nongovernmental organizations to take control of existing haemodialysis centres. This situation highlights the critical need for ongoing support to maintain the availability of dialysis treatment and medical care in crisis zones to minimize the risk of morbidity and mortality in patients with end-stage renal disease (*48*).

42. However, given the protracted nature of most emergencies and limited available data on the burden and needs of NCDs in countries in the Region, it can be difficult to determine the NCD capacity before any emergency arises. Countries and territories such as Afghanistan, Iraq, Lebanon, Libya, Palestine, Sudan and Somalia have used data from the WHO STEPwise approach to NCD risk factor surveillance (STEPS) survey to inform planning and disease management. Jordan and Lebanon, hosts to millions of Syrian refugees, were able to include their Syrian populations in their national STEPS survey.

43. Disparities in health system response are evident across the Region. For example, Afghanistan and Yemen have limited health system responses to NCDs, while Iraq, Lebanon and the Syrian Arab Republic have longer-standing national strategic measures and a strong primary health care system response to NCDs *(43).* In Afghanistan, donors have baulked at the additional costs NCD care would potentially introduce into an integrated package of health services.

44. To support NCD response in emergencies, considerable effort has been made in raising awareness. Guidance has been developed to support Member States and humanitarian agencies such as:

- technical guidance from the WHO Regional Office for South-East Asia to integrate NCD interventions into national health emergency preparedness and responses (*49*);
- technical guidance from the Regional Office for Europe on key priority areas for interventions within refugee and migrant groups (*50*);
- WHO's operational guidance for maintaining essential health services in the COVID-19 context (*51*);
- ICRC operational guidelines for field staff to address NCDs (*52*);
- the Sphere Handbook (*8*).

Vision and roadmap for addressing NCDs in emergencies in the Eastern Mediterranean Region

45. Emergency management is a dynamic process that unfolds in different phases. These phases involve risk reduction and preparedness, response and recovery. The different phases have different roles and challenges in addressing the health needs of populations affected by disasters and emergencies, especially when addressing NCDs.

- In stable settings, risk reduction and preparedness planning aim to reduce exposure and vulnerability to potential hazards that could lead to severe consequences. For example, strengthening health systems, promoting healthy behaviours, ensuring access to essential medicines

and technologies, and allocating adequate resources are some of the strategies that can enhance resilience and prevent complications.

- During the emergency response phase, immediate and targeted health interventions are crucial for addressing NCDs. The priority is to: provide timely and appropriate health services for NCDs, for instance, emergency treatment for life-threatening conditions such as heart attacks, strokes and acute asthma exacerbation; ensure specialized care such as renal dialysis for people with chronic kidney disease, chemotherapy for cancer patients, and continuity of care and medication for people living with NCDs such as insulin and wound care for patients with diabetes. Coordination and collaboration of the different stakeholders involved in service provision is crucial in this phase.
- Finally, in the recovery phase, the interventions focus on restoring and improving the health status and quality of life of affected people by applying lessons learned, strengthening health systems and integrating NCD management into long-term planning. For example, integrating NCDs in the primary health care model of care, training health workers, developing policies and guidelines, and engaging communities, are some of the actions that can support recovery and build back better.

46. By understanding and effectively navigating the different challenges and opportunities for addressing NCDs throughout the different phases, policy-makers and health care providers can enhance their emergency response efforts and minimize the adverse effects of emergencies on NCDs, reduce excess mortality and ensure the overall health and well-being of affected populations.

47. Several guidance and best practices have been developed to facilitate health system strengthening, emergency preparedness, and emergency response to major NCDs (*41*). However, these tools and best practices require contextualization and adaptation to the specific characteristics, phase and type of emergency, such as natural disasters or human-made crises, that affect the Region. Therefore, there is a need to develop practical tools that can address the specific challenges and needs of NCD management in different emergency scenarios, and support Member States and their health care providers (*41*). This necessitates collaboration with partners and stakeholders.

48. In December 2021, WHO launched a project to develop strategic recommendations for improving its technical support to countries to address NCDs during emergencies. The proposed regional framework for action on addressing NCDs in emergencies (see Annex 1) is based on the following thematic domains (see Fig. 5) and on the best practices identified in country case studies (see Annex 2).

Fig. 5. Conceptual framework for addressing NCDs in emergencies in the Eastern Mediterranean Region

(i) Leadership, collaboration and advocacy:

- This domain involves advocating for the integration of NCD management in emergency response, preparedness and recovery plans, incorporating an all-hazards approach that considers the different types and levels of emergencies. It aims to establish effective coordination mechanisms among all relevant stakeholders, including health authorities, humanitarian actors, civil society organizations, the private sector and affected communities during the three phases of an emergency. It also involves supporting the transition from emergency response to recovery and development, with a focus on building resilient health systems that can provide comprehensive and integrated NCD care in the recovery phase.

(ii) Resource mobilization and financing

- Resource mobilization and finance for NCDs in emergency settings are critical to ensure the continuity and quality of care for people living with NCDs. This domain involves allocating and mobilizing adequate funding and resources for NCD management in emergency settings, using various sources and mechanisms in preparedness plans or humanitarian response plans to ensure the financial protection of people living with NCDs in such settings regardless of national status. This domain also involves mobilizing and coordinating resources to ensure the availability of sufficient flexible funding to cover the priority NCDs' urgent needs and responding to unexpected NCD outcomes during the emergency response phase. Further, it includes planning for adequate funding for NCDs during the transition from the acute emergency to the recovery phase, and from humanitarian funds to domestic financing, to ensure uninterrupted services and supplies.

(iii) Service delivery, human resources, medications and technologies

- This domain involves ensuring the accessibility of essential NCD care services, medicines and the referral system, building capacity and developing national guidelines. The objective is to protect health and well-being from the risks and challenges posed by emergencies through: (a) ensuring NCDs are integrated in a minimum or essential service package based on WHO packages; (b) ensuring continuity of care and medication for people living with NCDs during an emergency response by a trained workforce; (c) rebuilding capacities during the recovery phase and strengthening and expanding the health system to address NCDs and related risk factors through people-centred primary health care and UHC approaches, using evidence-based interventions, quality NCD services and affordable NCD medicines and technology for all.

(iv) Information, data, research and digital health

- Information and data are crucial to assess the needs and gaps of people living with NCDs. This domain encompasses monitoring and evaluating the impact and quality of the interventions, generating evidence and best practices for policy and decision-making, and enhancing the accessibility and efficiency of services through innovative technologies and platforms. During the preparedness phase, this domain involves strengthening NCD surveillance and integrating NCDs into existing emergency assessment tools, as well as scaling up the use of digital health such as telemedicine in emergency settings. In the response phase, this domain involves integrating NCDs into the emergency initial rapid assessment tools and dashboard, as well as developing a mechanism for real-time data collection and reporting on NCD service provision in emergency settings. In the recovery phase, this domain involves conducting capacity assessments and mapping NCD services, strengthening and resuming NCD surveillance and integration into the existing health information system, promoting the use of digital health care solutions, and documenting and sharing knowledge of how to build back better.

(v) Community participation, communication and trust building

- This domain addresses engaging and empowering people living with NCDs and their families, raising awareness and promoting healthy behaviours, reducing stigma and discrimination, and fostering collaboration and coordination among different stakeholders. This will help to ensure the acceptability and sustainability of services and interventions and to overcome the barriers and challenges that may arise in emergencies. It entails the active involvement of people living with NCDs in preparedness planning and acute emergency response, as well as in recovery processes.

49. The proposed regional framework for action (see Annex 1) aims to reduce morbidity and mortality from NCDs in emergency settings and outlines a set of interventions for Member States to consider in order to step up their efforts and take concerted action to integrate NCDs in national preparedness and response plans and annual humanitarian response plans. The framework aligns WHO health system strengthening with the areas of work outlined in the humanitarian programming cycle, focusing on strategic interventions, to ensure considerable progress and high return on investment across the five domains.

50. The main purpose of the regional framework for action is to guide leaders, decision-makers and operational partners to:

- recognize the increasing burden of NCDs and the vulnerability of people living with NCDs in emergencies and integrate NCD care into the national standard operating procedures and guidelines for emergency response;
- strengthen coordination and collaboration with all stakeholders to effectively integrate NCDs in all aspects of emergency response, preparedness and recovery, adopting an all-hazard approach, and address priority health needs related to NCDs;
- secure adequate emergency and transitional funding for NCD care in emergency response and recovery and build health system resilience;
- ensure access to essential NCD care, including for acute complications, by adapting service delivery models and expanding primary care services based on a minimum benefits package, incorporating digital and innovative solutions;
- prioritize, procure and deploy essential, safe, affordable, quality and effective NCD medicines, technologies and supplies, and maintain continuity of medication in emergencies;
- acknowledge the significance of community engagement and individuals with lived experiences and involve them consistently in addressing NCD needs during emergencies;
- engage operational partners (e.g. nongovernmental organizations, UN agencies) and the private sector involved in front line health services in emergency settings in collaborating to prioritize and enhance NCD care within the emergency response;
- strengthen the capacity of the health workforce in emergency settings to effectively manage NCDs, including by adapting and utilizing relevant WHO packages and tools, such as WHO PEN and the HEARTS technical package for cardiovascular disease management in primary health care;
- conduct effective monitoring, surveillance and assessment of the provision of NCD services during the preparedness, response and recovery phases;
- take a proactive role in leading and advancing the research agenda on NCDs in emergencies, including operational evaluations, implementation research and drawing insights from past experiences (such as the COVID-19 pandemic and country-specific cases).

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Annex 1. Regional framework for action on addressing noncommunicable diseases in emergencies

RISK REDUCTION AND PREPAREDNESS PHASE		
Domain	**Strategic intervention**	**Indicator**
Leadership, collaboration and advocacy	• Advocate for the integration of noncommunicable diseases (NCDs) management in emergency response, preparedness and recovery plans incorporating an all-hazards approach. • Advocate and support legislation to ensure that people living in humanitarian crises, displaced populations, refugees and migrants have access to a quality NCD (minimum/essential or basic) package.	• Availability of an NCD emergency plan within the national preparedness plan taking an all-hazards approach
Resource mobilization and finance	• Allocate special funding to support essential NCD services and medicines as part of the pool of funding in preparedness plans. • Develop a transparent and realistic financial preparedness plan and procurement mechanisms for NCD medicines and technologies covering all relevant stakeholders. • Ensure mechanisms for financial protection for people living with NCDs in emergency settings, regardless of national status. • Conduct and use investment cases for NCD management and related risk factors.	• Availability of a specific NCD fund within the preparedness plan • Availability of financial protection mechanisms including people living with NCDs
Service delivery, human resources, medications and technologies	• Define a minimum/essential service package based on WHO packages for NCDs, including guidelines and protocols. • Develop national operational guidance/standard operating procedures (SOPs) for NCDs, which are regularly reviewed and updated (including for life-threatening conditions, specialized care and continuity of services). • Promote awareness and self-care management for NCDs. • Develop a plan or mechanism to secure and distribute essential NCD medications and supplies, including the NCD emergency kit. • Build capacity of health care providers on NCD management and appropriate interventions during an emergency.	• Existence of national operational guidance/SOPs for responding to NCDs during emergency • Existence of national plans/mechanisms to secure NCD medicines and supplies during an emergency
Information and data, digital health and research	• Strengthen NCD surveillance and regularly update data on NCDs and related risk factors, including lists of patients with complications, life-threatening conditions and specialized care. • Integrate NCDs into existing emergency assessment tools such as public health surveillance assessment, the 4Ws (i.e. who is doing what, where, when), the Health Resources Availability Mapping System (HeRAMS) and facility readiness. • Scale up the use of digital health, including telemedicine adapted to emergency setting.	• Ability of surveillance systems to collect data on NCD and related risk factors
Community engagement, communication and trust building	• Raise awareness and engage and empower communities and people living with NCDs regarding their needs and plan the response to an emergency based on the WHO framework for meaningful engagement of people living with NCDs, and mental health and neurological conditions. • Strengthen the capacity of community health workers, volunteers and peer educators and individuals with lived experience to provide NCD health services in emergency settings. • Establish feedback mechanisms and platforms for dialogue and information exchange between communities, health authorities and other stakeholders.	• Availability of platforms/networks for dialogue and feedback mechanisms

RESPONSE PHASE		
Domain	**Strategic intervention**	**Indicator**
Leadership, collaboration and advocacy	• Assign an NCD focal point in emergency response teams and platforms. • Establish a national multisectoral working group (strategic and technical) responsible for addressing NCDs in emergency response. • Strengthen collaboration and coordination among different sectors/organizations and stakeholders, humanitarian agencies, and the other relevant sectors (e.g. nutrition, water and sanitation) engaged in NCD prevention, treatment and care in emergencies. • Integrate NCDs into the emergency preparedness and response process, adopting an all-hazards approach. • Incident management is to be considered in the preparedness phase.	• Availability of assigned NCD focal point within the emergency response team or platform
Resource mobilization and finance	• Mobilize and coordinate resources to ensure the availability of sufficient flexible funding to cover priority NCD urgent needs. • Review and adapt contingency funding to prioritize NCD needs during the emergency. • Ensure the integration of NCDs in funding proposals to donors.	• Availability of contingency funding to cover NCD needs during the emergency response
Service delivery, human resources, medications and technologies	• Integrate and include NCDs in the national health sector response plan during the acute phase of the emergency. • Ensure the provision of uninterrupted NCD care and essential NCD services and interventions during emergencies based on the available resources and the context, including establishing temporary health care facilities, mobile clinics or telemedicine services focusing on primary health care with referral pathways to secondary and tertiary care. • Ensure a continuous supply of essential medicines and technologies using NCD emergency kits. • Adapt and implement national operational guidance to support national emergency responses. • Ensure adequate deployment of NCD workforce including community-based health workers and provide rapid training in NCD management in emergency settings.	• NCDs integrated in the national health sector response plan during the acute phase • Number of NCD kits deployed during the acute phase of an emergency
Information and data, digital health and research	• Integrate NCDs in emergency initial rapid assessment tools and regular mapping of service needs. • Ensure the integration of NCD information and surveillance as part of the emergency dashboard in the Health Emergency Operation Centre (HEOC). • Develop a plan or mechanism for real-time data collection and use evidence to report on NCD service provision from health facilities to inform response efforts.	• Availability of NCD rapid assessment data/report as part of emergency assessments • Availability of regular health facility reporting mechanism on NCD service provision
Community participation, communication and building trust	• Ensure full participation of the communities and individuals with lived experience of NCDs in priority-setting and response. • Establish communication exchange channels during emergencies for access to relevant NCD information on health promotion, risk factors and self-management. • Foster collaboration among community networks, nongovernmental organizations and the private sector to align response efforts in addressing NCDs in emergencies.	• Existence of community representation for people living with NCDs • People living with NCDs are part of priority-setting committees or working groups • Implementation of health promotion campaign on NCDs and related risk factors during emergencies

RECOVERY PHASE		
Domain	**Strategic intervention**	**Indicator**
Leadership, collaboration and advocacy	• Establish operational NCD technical working groups, an NCD national committee and high-level committee to address NCDs during the recovery phase. • Integrate NCDs in the national health strategy/development agenda as part of the recovery plan, humanitarian-development-peace nexus and building back better. • Develop and implement a comprehensive NCD recovery plan addressing key areas such as restoring essential services, re-establishing supply chains, ensuring adequate resources and promoting community engagement. • Advocate and foster multisectoral collaboration among diverse stakeholders, including health care providers, government agencies, civil society organizations and community representatives. • Adapt and implement the WHO regional framework for action on prevention and control of NCDs.	• Existence of a developed and implemented NCD costed early recovery plan • Existence of operational NCD technical working groups, NCD national committee and high-level committee
Resource mobilization and finance	• Conduct a comprehensive assessment of the resource requirements for NCDs. • Develop a funding plan to ensure uninterrupted NCD services during the transition from humanitarian to domestic funds. • Develop national financial plan to mobilize resources to secure sustainable financing for NCD care using innovative financing mechanisms such as taxation of harmful products (alcohol, sugar-sweetened beverages) and public–private partnerships.	• Existence of financial plan with allocated budget for NCD programme in emergencies and emergency response phases
Service delivery, human resources, medications and technologies	• Strengthen and orient the health system to address the prevention and control of NCDs and related risk factors through people-centred primary health care and universal health coverage. • Strengthen human resources and institutional capacities to ensure the continuity and quality of NCD care. • Implement evidence-based interventions (best buys) for NCD risk factors (e.g. tobacco control, salt reduction, physical activity promotion and alcohol harm reduction). • Expand the scope and quality of NCD services such as early detection, palliative care and rehabilitation. • Ensure the availability, affordability and quality of NCD medicines and technology based on WHO guidance, while ensuring equity and equality for the vulnerable and for marginalized groups and avoiding discrimination.	• Percentage of primary health care facilities that have integrated NCD prevention and control services into their service delivery (availability of essential medical equipment and supplies in NCD care facilities)
Information and data, digital health and research	• Conduct capacity assessments and mapping of services during the transition to recovery on NCD services. • Strengthen, build and resume NCD surveillance system activities guided by WHO NCD global targets and indicators. • Strengthen the integration of NCD surveillance into the existing health information system. • Promote the use of digital health care solutions, such as electronic health records, telemedicine platforms, mobile health applications and other digital tools and dashboards. • Document and share knowledge on best practices, country experiences and lessons learned to build back better.	• Availability of NCD capacity assessment and service mapping report • Availability of recent population-level information on NCD burden (STEPS)
Community participation, communication, and building trust	• Engage and empower the community and people with NCDs to ensure their full participation in the recovery planning process. • Establish and strengthen community support groups for people with NCDs to provide a platform for sharing experiences, information and psychosocial support. • Enhance mechanisms for multisectoral collaboration and feedback.	• Availability of community and patient support groups

Annex 2. Case studies

Leadership, collaboration and advocacy

NCD care in conflict settings: implementing an NCD model of care in the north-west of the Syrian Arab Republic

During the conflict in the Syrian Arab Republic, NCD care was challenged by shortages of medication, laboratory capacity and health information, alongside lack of access, displacement and insecurity. In the north-west of the country, WHO used an NCD thematic working group under the health cluster, bringing together NCD and emergency staff, to implement a new model of care for NCDs based on the WHO PEN package, bringing providers together around a set of common goals.

Addressing disruption of NCD services in Ukraine and the role of WHO's NCD focal point and thematic working group

The conflict in Ukraine in 2022 led to a widespread disruption of the medicine supply and access to NCD services. To support the response in this setting, with its high burden of NCDs, an NCD focal point was embedded within the WHO Incident Management Support Team. A key success was the establishment of an NCD thematic working group, which provided coordination among implementing partners and played a leadership and mentoring role (for example, in procurement and distribution). It achieved this through fostering strong linkages and collaboration among the different entities and stakeholders.

Resource mobilization and finance

Resource mobilization to build resilience and enhance access to NCD care in Yemen: collaborative efforts by the World Bank and WHO

The conflict in Yemen has further weakened its already fragile health care system and accessing essential NCD medicines and treatment has been a major challenge during the conflict. The World Bank and WHO have been working together since 2017 to prevent health system collapse by supporting essential services and building resilience. They have allocated US$ 1.3 million for NCDs at the secondary level annually and US$ 1 million for NCDs at the primary health care level in 2022/2023. One of the key entry points was the review of the minimum service package in 2022, persuading authorities to shift their focus from dialysis and tertiary care to prevention and early intervention for NCDs and finalizing NCD protocols and guidelines.

Service delivery, human resources, medications and technologies

Enhancing NCD care in the Syrian Arab Republic: utilizing WHO tools to bridge the gap in service delivery at the primary health care level

During the emergency response in the Syrian Arab Republic, the original version of the WHO PEN package was used to provide operational guidance. However, some needed clinical guidelines and supporting training materials were missing from the tool and had to be rapidly developed for use in capacity-building. The new package includes this clinical guidance, but lacks operational guidance. The need to adapt normative tools, as in the Syrian Arab Republic, leads to delays in the implementation of primary health care services for NCDs. A complete NCD toolkit or operational manual for NCDs in emergencies could support health system strengthening prior to emergencies and allow rapid capacity-building during the acute phase of the response.

Information and data, research and digital health

Improving health care delivery and monitoring in humanitarian contexts: integration of NCD data into the Health Resources and Services Availability Monitoring System (HeRAMS) in Afghanistan

The health and humanitarian contexts in Afghanistan have evolved rapidly in recent years, with considerable complexity involved in the delivery of primary health care and the coordination of multiple actors. WHO has supported the integration of NCD data into cluster-level resources such as HeRAMS, which provides a system for the continuous assessment of the availability of health services. HeRAMS has been deployed in Afghanistan since November 2021 and has been extended to include NCDs. This has reduced inefficiencies, helped address contradictory information and brought NCDs into focus in humanitarian monitoring.

Harnessing telemedicine for NCD care in Sudan: lessons learned during the COVID-19 pandemic

In Sudan, the Federal Ministry of Health, with the support of WHO, initiated a telemedicine hotline service to ensure uninterrupted access to essential health care for NCD patients. The service was provided by family doctors, who offered consultation, triage, treatment, health education, counselling, medical information and referral through mobile phones. The service was widely used by people living with NCDs during the pandemic and helped to bridge the gap caused by disrupted services.

Community engagement, communication and trust building

Enhancing access to essential NCD medications in Yemen: utilization of the NCD kit

Access to essential medicines has been a persistent issue for NCD patients throughout the conflict in Yemen. When emergency kits were first deployed in 2019, they contained many medications that had expired or which had non-Arabic labelling. Patients were reluctant to use them, leading to a breakdown in trust. Situations such as this could be avoided in other emergency contexts by ensuring that the voices of beneficiaries are captured to improve systems for procuring NCD medicines.