

Advocacy for NCD Prevention and Continuity of Care to Reduce Premature Mortality

A Collaborative Approach Involving Community, Government and NGOs



Asia Arsenic Network

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Integrated Approach to NCD Control centered on Vulnerable Communities

This presents the advocacy strategies of NCD-IV Model, an integrated approach developed through collaboration among the Asia Arsenic Network (AAN), the Government of Bangladesh, and the Ministry of Foreign Affairs of Japan (MOFA, Japan).

The model has evolved over 14 years of implementation and combines community-based interventions, health system strengthening, and digital health solutions to ensure continuity of care.

Based on field-based experience, this paper shares practical insights to support the implementation and scaling up of NCD responses, particularly in vulnerable and underserved settings.

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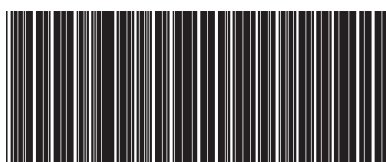
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Message



Non-communicable diseases (NCDs) have emerged as a major public health challenge in Bangladesh, accounting for a significant proportion of morbidity and mortality. Rapid urbanization, changing lifestyles, environmental factors, and demographic transitions have contributed to the growing burden of conditions such as hypertension, diabetes, cardiovascular diseases, and other chronic illnesses. Addressing this complex challenge requires a comprehensive, integrated, and people centered approach that ensures prevention, early detection, and continuity of care.

The Non-Communicable Disease Control (NCDC) Programme under the Directorate General of Health Services (DGHS) has been working to strengthen the national response to NCDs through policy development, service delivery expansion, and multi-sectoral collaboration. In this regard, partnerships with experienced organizations have been instrumental in piloting innovative and scalable models.

The Asia Arsenic Network (AAN), with its long-standing experience in community-based health interventions and environmental health, has made a valuable contribution in advancing NCD prevention and control efforts in Bangladesh. Through its NCD-IV model, AAN has demonstrated how integrated service delivery linking community platforms, primary healthcare facilities, digital systems, and multi-sectoral engagement can improve access, enhance service utilization, and ensure continuity of care, particularly in vulnerable and hard-to-reach populations.

This advocacy paper presents key insights, lessons learned, and policy recommendations based on the implementation of the NCD-IV model. It highlights the importance of strengthening community engagement, institutional capacity, digital health integration, and coordinated governance to effectively address the growing burden of NCDs.

I believe this document will serve as a valuable resource for policymakers, health professionals, and development partners in guiding future strategies and scaling up effective interventions. Continued collaboration, innovation, and commitment will be essential to achieving our shared goal of reducing the burden of NCDs and improving the health and well-being of the population.

A handwritten signature in black ink, appearing to read 'Halimur Rashid', written in a cursive style.

Prof. Dr. Md. Halimur Rashid
Director (Disease Control)
Directorate General of Health Services

Message



The Government of Japan has long been committed to supporting partner countries in addressing pressing global health challenges and advancing universal health coverage. In Bangladesh, this commitment has been reflected through sustained collaboration with government institutions, civil society organizations, and local communities to strengthen resilient and inclusive health systems.

Non-communicable diseases (NCDs) have become a growing concern in Bangladesh, posing significant social and economic challenges. Addressing this issue requires comprehensive and innovative approaches that integrate prevention, early detection, and long-term care, particularly for populations living in vulnerable and underserved areas.

In this context, the Asia Arsenic Network (AAN), in partnership with national stakeholders, has implemented the NCD-IV model as an integrated and community-centered approach to NCD prevention and control. The Government of Japan has long supported AAN's efforts. By combining community engagement, strengthened primary healthcare services, digital health solutions, and multi-sectoral coordination, this model has demonstrated practical pathways to improve access, enhance service quality, and promote continuity of care.

Japan values initiatives that promote sustainability, local ownership, and evidence-based interventions. The experiences and lessons presented in this advocacy paper provide important insights for scaling up effective models and fostering stronger collaboration across sectors and stakeholders.

I sincerely hope that this document will make a meaningful contribution to ongoing policy dialogue and lend further impetus to the Government of Bangladesh's national response to non-communicable diseases. The Embassy of Japan in Bangladesh remains firmly committed to its enduring partnership with Bangladesh in pursuit of our shared aspirations for improved health, well-being, and sustainable development for all.

A handwritten signature in black ink, reading 'SAIDA Shinichi' in Japanese characters.

SAIDA Shinichi

Ambassador of Japan to Bangladesh

Message



For more than three decades, the Asia Arsenic Network (AAN) has been committed to addressing critical public health challenges in Bangladesh, beginning with arsenic mitigation and the provision of safe water solutions. Over time, our engagement with communities has deepened our understanding of the complex interplay between environmental risks, social determinants, and emerging health challenges particularly the rising burden of non-communicable diseases (NCDs).

Recognizing that NCDs cannot be addressed through isolated interventions, AAN has progressively adopted a more integrated and community-centered approach. The NCD-IV model reflects this evolution bringing together community engagement, strengthened primary healthcare services, digital health innovations, and multi-sectoral collaboration into a unified framework. This approach is designed not only to improve access to care, but also to ensure early detection, continuity of services, and long-term behavior change, especially among vulnerable populations.

Our experience in Bangladesh has reaffirmed that sustainable health improvements are only possible when communities are empowered, health systems are responsive, and partnerships are built on trust and shared responsibility. Through close collaboration with the Government of Bangladesh, particularly the Directorate General of Health Services (DGHS), and with the support of development partners, AAN has been able to pilot and refine approaches that are both practical and scalable.

This advocacy paper captures the lessons, innovations, and strategic directions emerging from our field experiences. It emphasizes the importance of integrated service delivery, digital transformation, and community ownership in tackling the growing NCD burden. We hope that this document will contribute to ongoing policy dialogue and support the expansion of effective models across Bangladesh and beyond.

AAN remains committed to working alongside national and local stakeholders to build resilient health systems and healthier communities for the future.

A handwritten signature in black ink, appearing to read 'H. Yokota'.

Prof. Hiroshi Yokota
Representative Director
Asia Arsenic Network (AAN), Japan

Preface



Bangladesh is currently facing a dual burden of health challenges longstanding environmental risks and the rapidly increasing prevalence of non-communicable diseases (NCDs). In vulnerable regions, these challenges are often interconnected, disproportionately affecting communities with limited access to information, preventive services, and timely care.

As a national organization working at the grassroots level, Asia Arsenic Network Bangladesh (AANB) has witnessed firsthand how these realities shape the lives of people in both rural and climate-affected areas. Our experience has shown that effective NCD prevention and control require more than facility based services; they demand strong community engagement, locally adapted solutions, and sustained behavior change efforts.

The NCD-IV model represents AANB's commitment to bridging the gap between communities and the health system. By strengthening Community Clinics, empowering community groups, supporting frontline health workers, and integrating digital tools, this model creates a continuum of care that is accessible, inclusive, and responsive to local needs.

One of the key strengths of this approach lies in fostering ownership at the community level. When people are informed, engaged, and supported, they become active participants in their own health and well-being. This not only improves service utilization but also contributes to long-term sustainability of interventions.

This advocacy paper reflects our practical experiences, challenges, and lessons learned from implementing the NCD-IV model in the field. It highlights the importance of aligning national priorities with local realities and emphasizes the need for collaborative action among government institutions, development partners, and communities.

We firmly believe that with continued commitment, innovation, and partnership, it is possible to build a healthier Bangladesh where no one is left behind in accessing essential NCD services.

A handwritten signature in black ink, appearing to read 'Akhtar Ahmad', with a stylized flourish at the end.

Prof. Dr. Sk. Akhtar Ahmad
Chairman
Asia Arsenic Network Bangladesh

Executive Summary

Background of NCD Challenges in Bangladesh

Non-communicable diseases (NCDs) such as hypertension, diabetes, cardiovascular diseases, and chronic respiratory diseases, are a major public health challenge in Bangladesh, accounting for a large share of morbidity and premature mortality.

Despite ongoing government efforts since 2013, significant gaps remain in early detection, access to services, and continuity of care, particularly among vulnerable populations.

These challenges are driven not only by fragmented health service delivery but also by the social determinants of health (SDH), including poverty, environmental risks such as arsenic contamination and salinity, and limited access to quality healthcare. Addressing NCDs therefore requires an integrated and people-centered approach beyond facility-based care.

AAN's Experience and Evolution of NCD Interventions

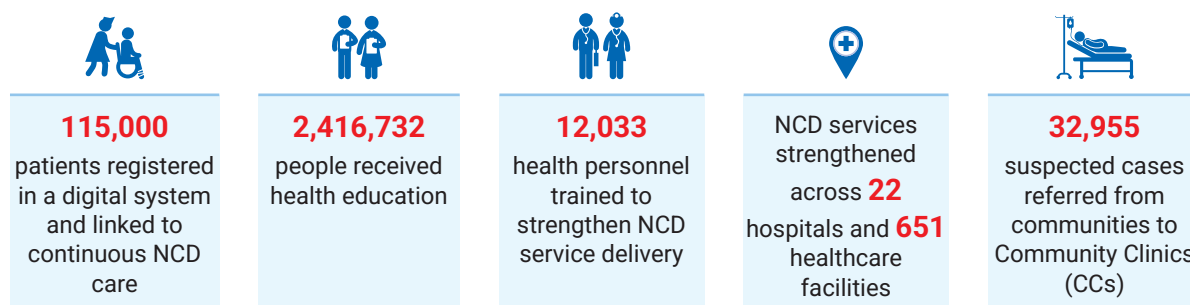
The Asia Arsenic Network (AAN) has worked in Bangladesh since 1996, initially focusing on arsenic mitigation, safe water provision, and community-based health interventions.

Building on these experiences and with support from the Ministry of Foreign Affairs of Japan (MOFA Japan), AAN expanded its work to NCD prevention and developed an integrated model linking community engagement, health system strengthening, digital health, and multi-sectoral collaboration. This model has evolved through four phases (2013–2026) in close coordination with the Government of Bangladesh and AAN Bangladesh (AANB).

Key Achievements

Through AAN's NCD initiatives, substantial progress has been achieved in strengthening service delivery, improving health outcomes, and promoting behavioral change.

Service Delivery Outputs



Strengthened referral linkages between ANC/PNC corners and NCD corners to promote NCD prevention and early detection.

These achievements were further assessed through a **longitudinal** follow-up survey of 900 patients (758 paired responses), evaluating changes in health, behavior, and economic burden.

Health, Behavioral, and Economic Outcomes

Controlled blood pressure increased from **16% to 58%**

High blood glucose decreased from **77% to 57%**

Overall, **74%** of patients maintained regular follow-up visits, demonstrating improved continuity of care between community and facility levels

About **90%** improved NCD knowledge

95% smoking cessation among smokers

Reduced out-of-pocket expenditure, with annual savings of **360–2,625** per person

These results indicate improved continuity of care, strengthened patient self-management, and better access to services, contributing to the prevention of disease progression.

Lessons Learned and Remaining Challenges

Field implementation revealed several critical structural challenges:

NCD services remain largely facility-centered, with limited community linkage

Many individuals, including women, are unaware of their health status and disease risks, seeking care only after conditions have progressed

Missed visits and limited follow-up systems undermine continuity of care

Low awareness, unhealthy behaviors, and environmental risks limit the effectiveness of interventions

Weak inter-sectoral coordination, especially in hard-to-reach and climate-vulnerable areas

The NCD-IV Model: An Integrated Approach

The NCD-IV Model is grounded in AAN's long-standing experience in supporting chronic arsenicosis patients since 1996 and originated from a 2012 needs assessment that examined the applicability of arsenic mitigation approaches to NCD control. Over more than 14 years of collaboration among MOFA Japan, AAN, and NCDC, the model has evolved through assessment, pilot implementation, institutionalization, and scale-up.

The model has evolved over four phases of implementation:

- Phase 1 (2013–2015):** Community-based awareness and early detection
- Phase 2 (2016–2018):** Expansion through government community platforms
- Phase 3 (2019–2022):** Strengthening NCD corners through digitalization and capacity building
- Phase 4 (2023–2026):** District-level scale-up, strengthening service linkages and digital systems

Building on this evolution, the model integrates key components to ensure continuity of care:

- a) Community platform:** awareness, screening, referral, and follow-up
- b) Facility platform:** diagnosis, treatment, and continuous care at Upazila Health Complexes (UHCs)
- c) Digital health systems:** patient registration, tracking, and follow-up
- d) Multi-sectoral action:** addressing social and environmental determinants
- e) Joint monitoring:** strengthening accountability and service quality

Policy Implications

Based on implementation experience, the following strategic directions are critical for scaling up effective NCD prevention and control in Bangladesh:

- i. **Expand integrated NCD management**
Move beyond a focus on hypertension and diabetes toward integrated prevention and management of a broader range of NCDs, including chronic respiratory diseases and arsenicosis, in response to increasing multimorbidity
- ii. **Strengthen patient tracking and follow-up**
Establish mechanisms to identify and support patients who miss care, and reinforce outreach, particularly for those not accessing appropriate services
- iii. **Improve access and enabling environments**
Expand NCD service delivery while improving facility conditions, including water, sanitation, and hygiene (WASH), to promote care-seeking and prevent infections
- iv. **Enhance data use and joint monitoring**
Strengthen monitoring systems to capture both facility-level performance and population-level trends, enabling context-specific responses
- v. **Strengthen coordination within health systems**
Improve collaboration across departments at UHCs, including bidirectional referral systems and linkages with ANC/PNC services
- vi. **Promote multi-sectoral action**
Strengthen collaboration with sectors such as DPHE, DAE, and LGIs to address environmental risks, including arsenic exposure from drinking water and food

The NCD-IV Model demonstrates that continuity of care supported by government systems, digital integration, community engagement, and multi-sectoral collaboration is essential for effective NCD control. It provides a practical, evidence-based pathway to expand NCD services, particularly in vulnerable and underserved areas, contributing to SDG 3.4.

Acronyms

AAN	Asia Arsenic Network
AHI	Assistant Health Inspector
ANC	Antenatal Care
BDHS	Bangladesh Demographic and Health Survey
BMI	Body Mass Index
BP	Blood Pressure
CC	Community Clinic
CG	Community Group
CHCP	Community Health Care Provider
CMC	Community Clinic Management Committee
CS	Civil Surgeon
CSG	Community Support Group
DGHS	Directorate General of Health Services
DM	Diabetes Mellitus
FU	Follow-up
FWC	Family Welfare Centre
HA	Health Assistant
HI	Health Inspector
HTN	Hypertension
IEC	Information Education & Communication
MoU	Memorandum of Understanding
MO	Medical Officer
NCD	Non-Communicable Disease
NCDC	Non-Communicable Disease Control
NCD-IV	Non-Communicable Disease Control Program Phase-IV
PNC	Postnatal Care
RMO	Residential Medical Officer
SACMO	Sub-Assistant Community Medical Officer
SDG	Sustainable Development Goals
SDH	Social Determinants of Health
SMS	Short Message Service
SSN	Senior Staff Nurse
UH&FPO	Upazila Health & Family Planning Officer
UHC	Upazila Health Complex
UP	Union Parishad
USC	Union Sub Centre
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

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Chapter-1: Introduction

Non-communicable diseases (NCDs), are a major public health challenge in Bangladesh, accounting for approximately 70% of all deaths and 19% of premature mortality. Despite ongoing efforts by the Government of Bangladesh, significant gaps remain in access to services, continuity of care, and the management of vulnerable populations.

Socially and environmentally vulnerable groups continue to face multiple barriers, including limited healthcare access, high out-of-pocket expenditures, and exposure to risk factors such as arsenic contamination. These challenges highlight the need for more integrated and context-specific approaches to NCD prevention and control.

In response, the Asia Arsenic Network (AAN) has developed and implemented a community-centered NCD model, building on its long-standing experience in Bangladesh.

This report presents practical insights and lessons learned from this experience to inform more effective and inclusive approaches to NCD control.



Project Inception Workshop in Khulna on 8 September 2023

Chapter-2: Background

Non-communicable diseases (NCDs) are a major global public health challenge, accounting for nearly 74% of all deaths worldwide. In response, the international community, led by the World Health Organization (WHO) and the United Nations (UN), has prioritized NCD prevention and control through global frameworks such as the Sustainable Development Goals (SDGs), particularly Target 3.4, which aims to reduce premature mortality from NCDs by one-third by 2030.

Global strategies emphasize population-level prevention, strengthening primary healthcare, and improving early detection and long-term management. Approaches such as the WHO Package of Essential Noncommunicable Disease Interventions (WHO PEN), along with the increasing use of digital health systems for patient tracking and follow-up, highlight the importance of integrated, people-centered care. However, many countries continue to face challenges, including inequitable access to services, health system limitations, and high out-of-pocket expenditures.

In Bangladesh, NCDs account for approximately 70% of all deaths, with premature mortality remaining high at 19%. According to the Bangladesh Demographic and Health Survey (2017–18), the prevalence of hypertension among women aged 35 and above is 45%, compared to 34% among men, highlighting the need for gender-responsive approaches in NCD control.

Despite policy commitments and progress in integrating NCD services into primary healthcare, significant gaps persist in service delivery, continuity of care, and equitable access. The functionality of NCD services varies widely, with challenges including shortages of trained personnel, inconsistent medicine supply, weak referral systems, and limited use of digital health tools. As a result, early detection remains low, and many patients seek care only at advanced stages of disease.

Vulnerable populations face compounded risks due to social, environmental, and economic factors. In particular, women experience higher prevalence of certain NCDs and greater barriers to accessing timely diagnosis and care due to social norms, limited mobility, and financial dependency. Environmental risks such as arsenic contamination and salinity further increase health risks, especially in coastal and climate-affected areas.

In response, the Government of Bangladesh has introduced national strategies, including the establishment of NCD corners at Upazila Health Complexes (UHCs), integration of NCD services into primary care, and adoption of multi-sectoral approaches aligned with WHO PEN. However, implementation gaps remain, particularly in ensuring continuity of care, strengthening follow-up systems, and institutionalizing preventive services at the community level.

Against this backdrop, field observations in south-western Bangladesh reveal persistent challenges, including missed follow-up visits, fragmented services for multi-morbidity, and limited systems to track and re-engage patients. These gaps are further compounded by infrastructure constraints, environmental exposure, and socio-economic vulnerabilities.

Building on over two decades of experience in addressing arsenicosis and community health, the Asia Arsenic Network (AAN) has developed a community-centered and integrated approach to NCD control. This approach directly responds to these challenges by strengthening continuity of care, improving patient tracking and follow-up, and enhancing access to quality services for vulnerable populations.



Hospital management representatives from all Upazilas of Khulna District undertake an exposure visit to the NCD service model hospital in Chowgacha to gain practical experience through observing NCD activities firsthand

Chapter-3: Who We Are & Why AAN is the Right Implementing Partner

The Asia Arsenic Network (AAN) is a trusted and capable implementing partner for NCD prevention and control in Bangladesh, particularly in vulnerable and hard-to-reach communities. With over three decades of experience in community-based public health and nearly 14 years in NCD programming, AAN combines strong technical expertise, institutional credibility, and deep community trust.

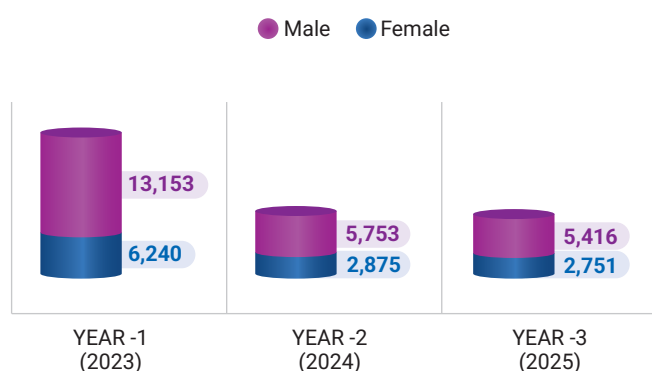
AAN's work is guided by the "Toroku Spirit," promoting collective action, solidarity, and shared responsibility. This community-centered approach supports local ownership and sustainability—key to effective NCD prevention and long-term follow-up.

Since 1996, AAN has developed expertise in environmental health, arsenic mitigation, epidemiology, and patient-centered care, which are highly relevant to addressing NCD risks linked to environmental factors.

AAN applies an integrated model linking community engagement with health system strengthening, including awareness, screening, counseling, referral, and follow-up, bridging the gap between communities and formal healthcare services.

AAN maintains strong collaboration with the Directorate General of Health Services (DGHS), formalized through a Memorandum of Understanding in 2017, ensuring alignment with national policies.

Identified Patient in Khulna



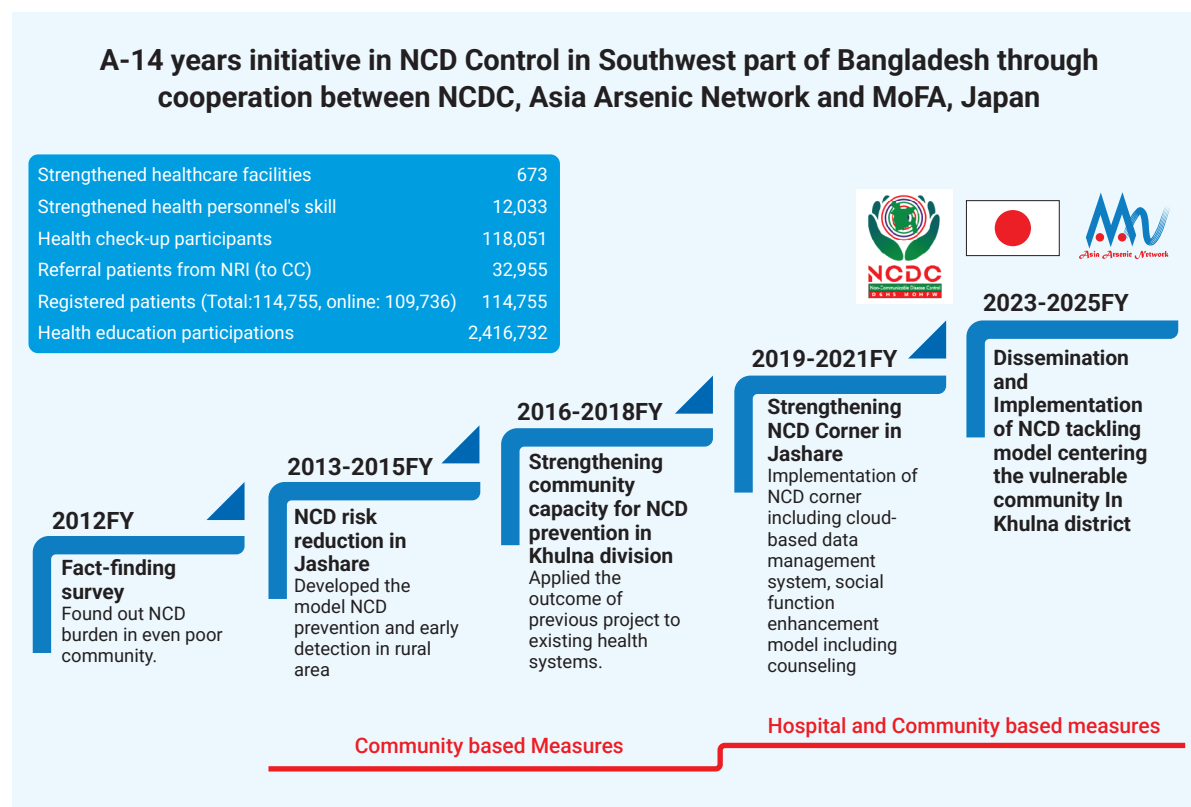
It has demonstrated capacity to implement large-scale programs, including Bangladesh's first door-to-door NCD screening initiative in 2017 and recent interventions (2023–2026) across ten districts in Khulna Division.

Through research and field experience, AAN continuously identifies key risk factors and service gaps—such as low awareness, poor follow-up, gender disparities, and weak coordination—and uses these insights to improve program effectiveness.

AAN prioritizes equity by focusing on underserved populations, including women, the rural poor, urban slum dwellers, the elderly, and persons with disabilities. Its long-standing collaboration with MOFA Japan reflects strong governance and the ability to manage donor-funded programs effectively.

AAN implements its activities in Bangladesh through AAN Bangladesh (AANB), under its overall direction and guidance.

In summary, AAN's experience, integrated approach, government collaboration, and commitment to equity make it a highly suitable and strategic partner for NCD prevention and control in Bangladesh.



Chapter-4: Key Advocacy Messages for NCD Premature Death Reduction and Prevention

NCDs are the cause of death in Bangladesh. This burden is particularly pronounced in the south-western region of the country, where environmental vulnerability, poverty, and limited access to quality health services interact. Addressing NCDs therefore, requires a strategic shift from a treatment-dominated model toward a prevention-first approach that prioritizes early detection, risk reduction behavioral changes, and continuity of care across the life course.

Prevention of NCDs is not solely the responsibility of the health sector. Evidence clearly shows that health outcomes are influenced by a wide range of social, environmental, and behavioral factors. A comprehensive whole-of-society approach is essential, one that actively engages families, schools, communities, women's groups, civil society organizations, and local institutions to create supportive environments for healthy choices. Without collective action beyond healthcare facilities, sustainable reduction in premature NCD deaths will remain unattainable.

Social determinants of health play a decisive role in shaping NCD risk in Bangladesh. Factors such as unsafe drinking water (including arsenic contamination), salinity intrusion in coastal areas, food insecurity, low health literacy, poverty, and geographic barriers significantly increase exposure to NCD risk factors while simultaneously limiting access to prevention and care services. These determinants disproportionately affect rural populations, urban slum dwellers, and marginalized groups, reinforcing health inequities. Therefore, reducing premature NCD mortality requires coordinated multi-sectoral collaboration involving health, water and sanitation (WASH), agriculture, education, and local government sectors to address root causes rather than merely treating diseases.

Community-based platforms are critical entry points for effective NCD prevention and control. Community volunteers, Community Groups (CGs), Community Support Groups (CSGs), and school-based programs can play transformative roles in raising awareness, promoting healthy behaviors, supporting early screening, and facilitating timely referral. When communities are empowered with knowledge and basic tools, early identification of risk factors becomes possible, allowing interventions before complications develop. Strengthening linkages between Community Clinics responsible for screening, follow-up, and medicine refills and NCD Corners at Upazila Health Complexes responsible for diagnosis and treatment is essential to ensure continuity of care, reduce service drop-out, and ultimately prevent premature mortality.

Digital health systems have emerged as powerful enablers in strengthening NCD services. Digital registration, patient tracking, appointment reminders, and electronic reporting improve follow-up

compliance, enhance data quality, and support evidence-based decision-making. However, digital tools are most effective when embedded within government health systems and reinforced by community-level structures. Technology alone cannot replace human engagement; instead, it must complement frontline health workers and community networks to ensure inclusiveness and sustainability.

The core advocacy message is therefore, clear and compelling: Bangladesh urgently needs a prevention-first, community-centered, multi-sectoral, and equity-driven approach to effectively reduce premature deaths from NCDs. This approach must be supported by digital health innovations and tailored strategies for coastal, climate-vulnerable, and underserved populations, particularly in the south-western region.

Asia Arsenic Network (AAN) addresses NCD prevention and control through a comprehensive multi-sectoral approach that explicitly focuses on the social determinants of health. A multisectoral approach is a deliberate and collaborative strategy that engages multiple sectors such as health, education, agriculture, housing, water and sanitation, and finance to jointly influence the root causes of health outcomes. By leveraging shared resources, aligning evidence informed policies, and promoting intersectoral action, this approach enhances equity, effectiveness, and sustainability of health interventions.

In the context of Bangladesh, a multisectoral approach to healthcare represents a whole-of-society strategy in which the Ministry of Health and Family Welfare (MoHFW) works in partnership with other government ministries, non-governmental organizations, the private sector, and local communities. This approach recognizes that health outcomes are shaped by factors far beyond clinical care, including nutrition, education, safe water, sanitation, livelihoods, and environmental conditions. Addressing these interconnected determinants is essential for reducing NCD risk and ensuring long-term health improvements.

Remaining firmly committed to this policy direction, AAN has implemented a range of interventions aimed at reducing premature mortality through prevention-focused, multi-sectoral action. Throughout its long engagement in Bangladesh, AAN has consistently worked to prevent health deterioration by integrating agriculture, education, local government, and WASH interventions into the promotion of healthy lifestyles and improved health-seeking behavior.

Chapter-5: Proposed Model for Tackling NCDs

The proposed NCD IV model ensures continuity of care between the community and the health system, focusing on vulnerable populations:

In Bangladesh, a major challenge in the prevention and control of noncommunicable diseases (NCDs) is the fragmentation of service delivery systems and the impact of social determinants of health. The current situation shows that the fragmented health system and factors such as poverty, education, nutrition and environmental conditions combine to create significant barriers to early detection, treatment access and regular follow-up, especially among vulnerable populations. As a result, preventable complications are increasing, leading to avoidable premature deaths and is a serious public health concern.

In this context, the NCD IV model proposes an integrated and scalable framework that aims to address these challenges by creating a supportive environment. It emphasizes multi-sectoral interventions, where sectors such as agriculture, education, local government and water, sanitation and hygiene (WASH) are involved, as well as a “whole of society” approach to raising community awareness, ensuring early detection of diseases and strengthening follow-up systems, with community volunteers and school-based health programmes playing a key role.

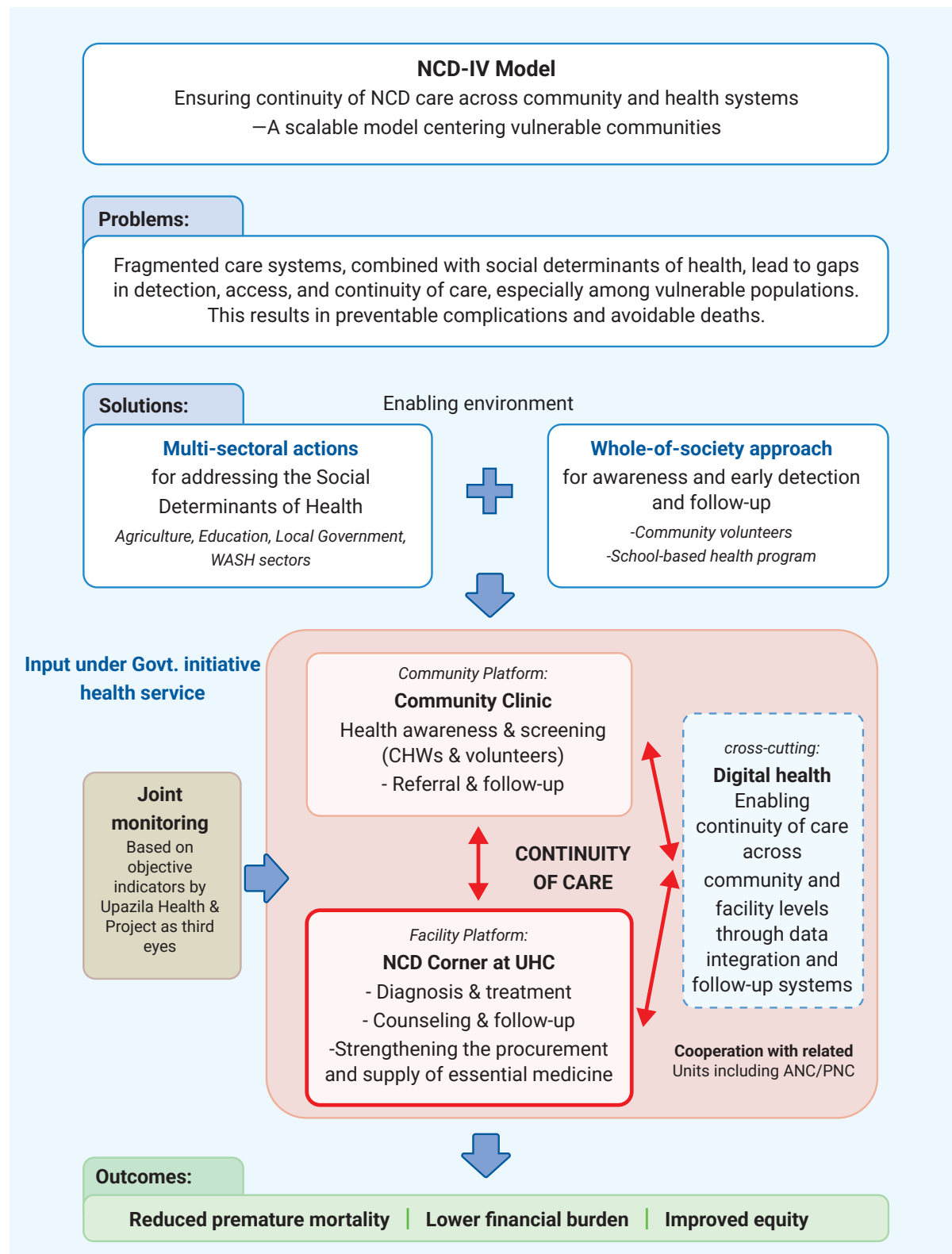
At the heart of this model is the health sector, which contributes through four key platforms. First, the community platform includes community clinics, which provide health awareness, screening services, engagement of community health workers and volunteers, and referral and follow-up activities. Secondly, the facility platform is centered around the NCD Corner of the Upazila Health Complex (UHC), where diagnosis, treatment, counseling and follow-up services are provided, as well as procurement and supply of essential medicines are strengthened and coordinated with



A working team of Phultala UHC under proposed model

related units including ANC/PNC Corner. Thirdly, the integrated digital health system ensures continuity of services at the community clinic and hospital facility level through data integration and structured follow-up mechanisms. Fourthly, joint monitoring is conducted by the Upazila Health Authority and the project based on objective indicators as a “third eye” to ensure accountability and effectiveness. The expected

outcomes of this integrated effort include reduction in premature mortality, reduction in financial burden and improvement in equity in access to healthcare. Furthermore, this model provides a strong foundation for strategic policy actions to institutionalize and scale up comprehensive NCD prevention and control initiatives across Bangladesh.



5.1 Multi-Sectoral and Whole-of-Society Approaches:

Addressing Non-Communicable Diseases (NCDs) in Bangladesh requires more than strengthening health service delivery alone. To achieve sustainable impact, it is essential to combine multi-sectoral approaches that address the social determinants of health (SDH) with whole-of-society approaches that ensure effective implementation at the community level.

These two approaches are distinct but complementary.

- The multi-sectoral approach focuses on policy-level coordination across sectors such as water, agriculture, education, environment, and local government to address structural determinants of health.
- The whole-of-society approach emphasizes community-level engagement to promote awareness, early detection, referral, and continuity of care.



Chairman of AAN Bangladesh is handing over NCD Screening and Digitalization item to the UH&FPO of Rupsha UHC



UNO, Koyra observing NCD screening & treatment service.

Integrating these two approaches significantly enhances the effectiveness of health sector interventions.

While the health sector provides essential services for screening, diagnosis, and treatment, its impact is often limited when underlying risk factors remain unaddressed and when patients fail to remain engaged in care.

By combining structural interventions with community-level action:

- Environmental and socio-economic risk factors can be reduced
- Access to services can be improved
- Continuity of care can be strengthened through follow-up systems
- Drop-out patients can be re-engaged into treatment
- Preventive and curative services can function more effectively

An integrated approach therefore enables the health system to move beyond reactive service delivery toward a **proactive, preventive, and people-centered system**, capable of addressing both the causes and consequences of NCDs.

5.2 Multi-sectoral approach: measure taken in Bangladesh

The Government of Bangladesh has undertaken various important measures to implement a multi-sectoral approach for the prevention and control of Non-Communicable Diseases (NCDs). It has prepared the MULTISECTORAL ACTION PLAN FOR PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES 2018–2025 with a three-year operational plan and has taken steps for its implementation.

These measures mainly focus on addressing the social determinants of health (SDH) through coordination across sectors beyond the health sector.

5.2.1 Development of national policies and strategies

The government has adopted integrated strategies and action plans at the national level for NCD prevention and control, involving sectors such as health, nutrition, environment, education, and local government.

5.2.2 Strengthening multi-sectoral coordination

Coordination has been increased among various ministries such as health, agriculture, local government, education, and environment, so that the root causes of health risks can be addressed collectively.

5.2.3. Development of WASH (water, sanitation, and hygiene)

The government is implementing various projects to improve safe water supply and sanitation systems, which directly contribute to reducing NCD risks.

5.2.4. Addressing arsenic risk

To reduce arsenic exposure through water and food, the Department of Public Health Engineering, the Department of Agricultural Extension, and the health sector are working together.

5.2.5. Integration of health in education

Health, nutrition, physical activity, and anti-tobacco education have been included in school curricula to raise awareness among children and adolescents.

5.2.6. Environmental and pollution control

Various policies and regulatory measures have been adopted to reduce air pollution, ensure food safety, and address environmental risks.

5.2.7. Tobacco control activities

Legislation, taxation, and public awareness activities are being implemented to reduce tobacco use.

5.2.8. Social protection and poverty reduction

Social protection programs have been introduced for poor and vulnerable populations, which help improve access to healthcare services.

5.2.9. Engagement of local government

Union Parishads, municipalities, and city corporations have been engaged in health activities to ensure effective implementation at the local level.

5.2.10. Joint declarations and strategic initiatives:

Recently (such as the 2025 joint initiative), different sectors of the government have committed

to working together for NCD prevention, which has further strengthened the multi-sectoral approach. However, effective implementation at the field level remains a challenge due to limitations in coordination among sectors and fragmented planning.

To effectively operationalize multi-sectoral actions, it is necessary to:

- Strengthen coordination mechanisms among ministries and departments
- Align sectoral policies and budgets to address SDH-related risks
- Establish joint planning, monitoring, and data-sharing systems
- Integrate environmental and social risk indicators into NCD strategies

Without such structural and policy-level coordination, NCD prevention efforts will remain fragmented and insufficient. Therefore, multi-sectoral action is not an option, but a fundamental foundation for sustainable and equitable NCD prevention

5.3 Multi-Sectoral Action for Addressing the Social Determinants of Health (SDH)

Non-Communicable Diseases (NCDs) are rapidly increasing in Bangladesh, posing a significant threat to public health, economic productivity, and long-term national development. While considerable progress has been made in strengthening healthcare services, the growing burden of NCDs highlights that their root causes extend beyond the health sector and are deeply linked to the social determinants of health (SDH).

Key determinants of NCDs in Bangladesh include unsafe water and sanitation, arsenic exposure, unhealthy diets, environmental pollution, low health literacy, and socio-economic vulnerability. These factors are shaped by policies and investments across multiple sectors, including water and sanitation (WASH), agriculture, education, environment, and local government.

A multi-sectoral approach is therefore essential to address these structural determinants. It focuses on policy-level coordination and institutional alignment to reduce environmental and behavioral risks and to create an enabling environment for prevention and care.

Key areas of multi-sectoral action include:

- Ensuring access to safe water supply and improved sanitation systems
- Promoting arsenic-risk reduction in agriculture, including safer rice production practices
- Strengthening environmental protection and pollution control
- Integrating health and nutrition education into school curricula



Community Group (CG) members are organizing an NRI Camp with the active support and participation of community volunteers



Community Group (CG) members are organizing an NRI Camp with the active support and participation of community volunteers-1

- Addressing poverty and vulnerability through local government and social protection systems

In this context, the Government of Bangladesh has emphasized multi-sectoral collaboration, including through its 2025 joint declaration on coordinated action for NCD prevention and control. However, effective implementation at the field level remains a challenge due to limited operational coordination and fragmented planning across sectors.

To operationalize multi-sectoral action, it is critical to:

- Strengthen coordination mechanisms across ministries and departments
- Align sectoral policies and budgets to address SDH-related risks
- Establish joint planning, monitoring, and data-sharing systems
- Integrate environmental and social risk indicators into NCD strategies

Without such structural and policy-level coordination, NCD prevention efforts will remain fragmented and insufficient. Multi-sectoral action is therefore not optional but foundational for sustainable and equitable NCD prevention.

5.4 Whole-of-Society Approach for Community-Level Engagement and Continuity of Care: Lessons from the NCD-IV Project

While multi-sectoral action provides the structural foundation for addressing NCD risk factors, it alone is not sufficient to ensure that services reach communities or lead to sustained behavioral change. A whole-of-society approach is essential to translate policies into effective action at the community level.

This approach emphasizes the active engagement of a wide range of societal actors, including community volunteers, women's groups, families, local leaders, schools, and civil society organizations. These actors play a critical role in bridging the gap between health systems and communities, particularly in underserved and hard-to-reach areas.

The NCD-IV Project in Khulna District demonstrates how a whole-of-society approach can operationalize community-based prevention and care through practical, scalable mechanisms.

Key functions of this approach include:

- Raising awareness and promoting healthy behaviors at the household and community levels
- Supporting early detection through screening and community outreach
- Facilitating referrals to appropriate health services
- Ensuring follow-up and continuity of care, particularly for patients at risk of dropping out

AAN's experience shows that community-based platforms, especially women-led groups, can significantly enhance access to care, strengthen



A women group leader conducting an awareness session about on NCDs prevention and service facilities issues

trust in health services, and support long-term engagement in prevention and treatment.

To strengthen the whole-of-society approach, it is important to:

- Institutionalize community volunteer systems within national NCD frameworks
- Provide structured training, supervision, and support mechanisms
- Strengthen linkages between community platforms and health facilities
- Promote inclusive participation, particularly among women and vulnerable populations

5.5 Community Platform: Role of Community Clinic on Communities NCD Care:

In this context, Community Clinics (CCs) play a pivotal role in ensuring the continuity of NCD care. These clinics are strategically located at the grassroots level, making them highly accessible to rural populations and disadvantaged groups. Many community members prefer these facilities because they provide low-cost or free healthcare services, reduce travel time and expenses, and foster trust through local engagement. By leveraging the proximity and accessibility of



A CHCP is checking blood sugar of a NCDs patient, Batiathata Upazila, Khulna



CHCP is checking blood BP of a NCDs patient, Dumuria Upazila, Khulna

Community Clinics, the health system can deliver primary NCD prevention, screening, and follow-up services more efficiently.

Community Clinics can act as first contact points for NCD detection and management. In addition to motivating health workers to detect diseases early during pre-session and EPI, AAN has organized NCD risk assessment campaigns with community clinic group members to teach them strategies for referring suspected patients to community clinics.

Early detection at this level is critical, as it prevents the progression of NCDs and reduces the burden on higher-level health facilities. Moreover, consistent engagement through these clinics helps instill awareness of healthy lifestyles, adherence to prescribed medication, and behavioral modifications such as improved dietary practices, increased physical activity, and cessation of tobacco use.

- The role of CC in NCD control and management;
- Raising awareness about NCD risk through health workers as well as community group members
- Measuring risk-factors, sending referrals, providing follow-up services, sending

information to digital databases through CG members as well as imams, teachers-students, social workers, union council representatives and NGO workers, providing services and campaigning on issues such as self-purchase of medicines due to disruption in the supply of government medicines, not stopping medicines without doctor's advice, etc.

- Attracting the attention of authorities in health complexes to take communication and preventive measures in service-deprived areas and areas with high patient incidence

5.6 Facility Platforms: Role of NCD Corners at Upazila Health Complexes:

Upazila Health Complexes (UHCs) represent the backbone of Bangladesh's primary healthcare system and offer a strategic platform for expanding Non-Communicable Disease (NCD) prevention and care. Within this system, NCD Corners are uniquely positioned to operationalize early detection, routine screening, counseling, referral, and long-term follow-up for NCDs at the population level.

As facility-based platforms, NCD Corners bridge the gap between community-level awareness and higher-level clinical care. They enable timely identification of hypertension, diabetes, and other NCD risks often before complications develop thereby reducing avoidable morbidity, mortality, and health system costs. For rural, coastal, and underserved populations, NCD Corners often serve as the only accessible point for continuous NCD care.

Strengthening NCD Corners aligns directly with national priorities including Universal Health Coverage (UHC), the Essential Service Package (ESP), and Bangladesh's commitment to SDG 3.4. When fully functional, these platforms decentralize services, reduce pressure on secondary and



SSN of NCD corner uploading follow-up patient data info by checking his patient book



A Medical Officer listens to the patient's concerns and writes a prescription at the NCD Corner



SSN of NCD corner ensures patients' online registration and provides the necessary counseling

tertiary facilities, and lower out-of-pocket expenditure by promoting early intervention and regular follow-up close to where people live.

5.7 Implementation Findings and taken action

Despite policy commitments, the functionality of NCD Corners varies widely across Upazilas due to several systemic challenges:

Implementation findings	Way forward taken action
Inadequate staffing and high workload	Assign dedicated NCD focal persons and integrate task-sharing with trained nurses and paramedics
Irregular supply of medicines and diagnostics	Strengthen supply chain forecasting and ring-fence essential NCD commodities
Limited provider capacity on NCD counseling and follow-up	Introduce regular in-service training on the job training with supportive supervision
Weak referral and follow-up mechanisms	Establish simple referral tracking tools linking Community Clinics, UHCs and upper medical college or specialize hospital for better service
Poor data utilization for decision-making	Integrate NCD indicators into routine HMIS with feedback loops to facilities
Weak service on physical & biochemical check during Follow-Up care service	Establish CC- Follow-Up care service mechanism for physical & biochemical check and link with simple referral tracking tools
Lack of effort for maintaining Standard Operating Protocol	Develop and enforce standard operating protocols (SOPs) with regular monitoring and accountability mechanisms, beside Prepare a strategy document on the responsibilities of patients and service providers and display it in a clearly visible place in the NCD Corner.
Irregularity of trained service providers at NCD Corner	Ensure regular deployment and retention of trained providers through scheduling, incentives, and monitoring systems
Low community awareness of NCD Corner services	Link facility services with community outreach and local government and non-government platforms

Addressing these gaps will transform NCD Corners from nominal service points into effective hubs for prevention, early detection, and long-term NCD management.

Investing in functional NCD Corners at Upazila Health Complexes is a low-cost, high-impact strategy. It strengthens the primary healthcare system, protects vulnerable populations, reduces future treatment costs, and accelerates progress toward national and global NCD targets. Scaling up and institutionalizing these facility platforms is essential to achieving sustainable and equitable NCD prevention in Bangladesh.

5.8 Cross-cutting Digital Health Continuity Of Care Across Community And Facility Levels Through Data Integration and Follow-up Systems:

In the contemporary context of Non-Communicable Disease (NCD) management, digital health systems ensure continuity of care, improve data-driven decision-making processes, and have emerged as an indispensable tool in enhancing the overall quality of healthcare services. As NCD management is a lifelong process, the NCD-IV project has integrated advanced digital tools and mobile applications for registering, tracking, and monitoring patient health outcomes, where

Community Clinics, along with Upazila Health Complexes, are playing an essential role in coordinating an effective and improved continuity of care using these tools.

Under the NCD-IV project, a centralized Digital NCD Registry has been established, which ensures systematic patient enrollment, long-term tracking, and coordinated service delivery across different levels of care, and has also attracted the attention of patients as well as their family members in disseminating health information.

This digital approach ensures that both patients and healthcare providers can maintain an organized, secure, and accurate record of relevant medical information, thereby facilitating timely interventions, follow-up, and long-term disease management. At the same time, the promotion of digital health management at all levels of the community has accelerated awareness-building activities for NCD prevention by enabling communities to benefit from these systems. Therefore, as a cross-cutting issue, digital health management plays an essential role in ensuring continuity of care at all levels of the community.

Under the NCD-IV project, digital tools and software have been employed to capture and maintain comprehensive patient records. These tools processes

- Registration of new patients and creation of digital profiles
- Continuous monitoring of patient health indicators, such as blood pressure, blood glucose, weight, and other clinical markers
- Recording lifestyle changes including dietary habits, physical activity, and tobacco use
- Integration of follow-up visits from Community Clinics (CC), NCD Corners at Upazila Health Complexes
- Unique digital identification number assigned to each registered patient to



Chief of the project (AAN Japan) is evaluating follow-up system by visiting a patients home.

AAN developed follow up care system via mobile app which using at CC level

prevent duplication and ensure traceability across facilities

- Digital follow-up tracking dashboard for healthcare providers to identify missed appointments and high-risk patients

To facilitate field-level data collection, mobile applications are used by community clinic health staff (CHCP). These apps allow real-time data entry during home visits, community outreach sessions, and mobile screening by self-risk detection app .

This system includes an SMS reminder mechanism, which identifies drop-out patients and sends

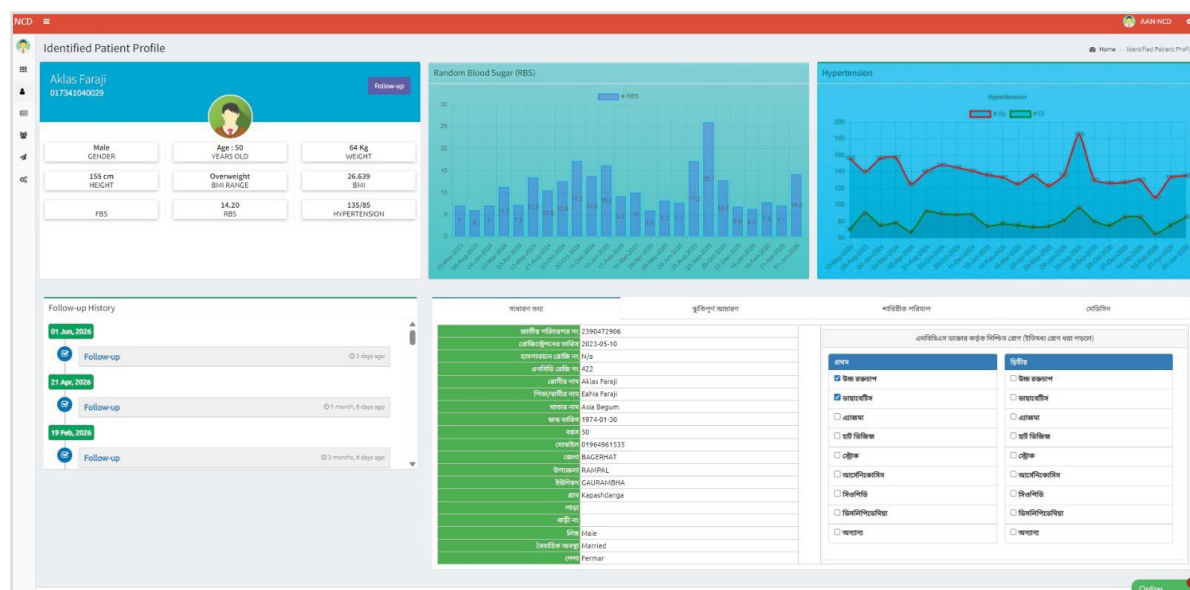


A nurse is accessing and reviewing the patient's digital health profile at the NCD Corner while providing personalized counseling and health education.

follow-up notifications, thereby strengthening treatment adherence and continuity of care.

By digitizing patient information at the point of care, NCD-IV ensures that data is accurate and immediately available for clinical and operational decision-making.

5.8.1 Patient Data Coverage:



Dash board in database

The NCD-IV project has successfully registered a total of 34,725 new patients in its digital system across all project areas. In addition, longitudinal follow-up data has been maintained for 187,136 patients, enabling healthcare providers to monitor changes in patients' health status over time, assess treatment adherence, and identify patients at risk of complications.

The Digital Registry enables analysis of patient outcomes, such as blood pressure (BP) and glucose control rates, follow-up compliance, and risk stratification of high-burden populations.

These large datasets not only support clinical management but also provide a strong foundation for future research, planning, and resource allocation.

5.8.2 Digital Workflow and Features:

The digital system under NCD-IV includes multiple functionalities to ensure continuity of care:

- Sends SMS reminders to patients for drop-out follow-up visits
- Enables partial data sharing between Community Clinics and NCD Corners
- Provides real-time updates of patient records
- Ensures secure and organized storage of all relevant patient information
- Collects information from the database to identify patients who missed scheduled follow-ups, which is distributed from NCD Corners to Community Clinics, and ensures targeted follow-up through volunteers
- Maintains an integrated referral tracking system to monitor patient movement between Community Clinics, NCD Corners, and higher-level healthcare facilities
- Includes a follow-up compliance monitoring tool that helps generate periodic reports for

program managers and policymakers.

This digital workflow has streamlined patient monitoring, increased follow-up rates, and created a reliable system for maintaining continuity of care across multiple levels of the healthcare system.

5.8.3 Impact on NCD Care:

Early experience and monitoring have shown significant positive outcomes:

- Reduction in patient drop-out rates: approximately 70% decrease
- Improved adherence to scheduled appointments
- Improved quality of care and ensured continuity
- Increased follow-up completion rates due to SMS-based reminders and digital tracking mechanisms



Patient is showing SMS received from NCD Corner for her irregular visit

- Easier early identification of uncontrolled hypertension and diabetes cases through automated data review alerts

Additionally, this digital system enables healthcare providers and community volunteers to actively engage with patients.

5.8.4 Policy, Analytics, and Future Use

Although district- and national-level analytics are still under development, the data captured through the NCD-IV digital system can play an important role in the following areas:

- Supporting policy-making and planning
- Guiding resource allocation
- Supporting research activities
- Ensuring sustainable and scalable digital health management through integration with national health information systems
- Enabling data-driven budgeting and performance monitoring at Upazila and District levels

As the system matures further, these analytics will provide important insights to improve preventive strategies and strengthen Bangladesh's overall NCD response.



A collaborative advocacy meeting with government policy maker

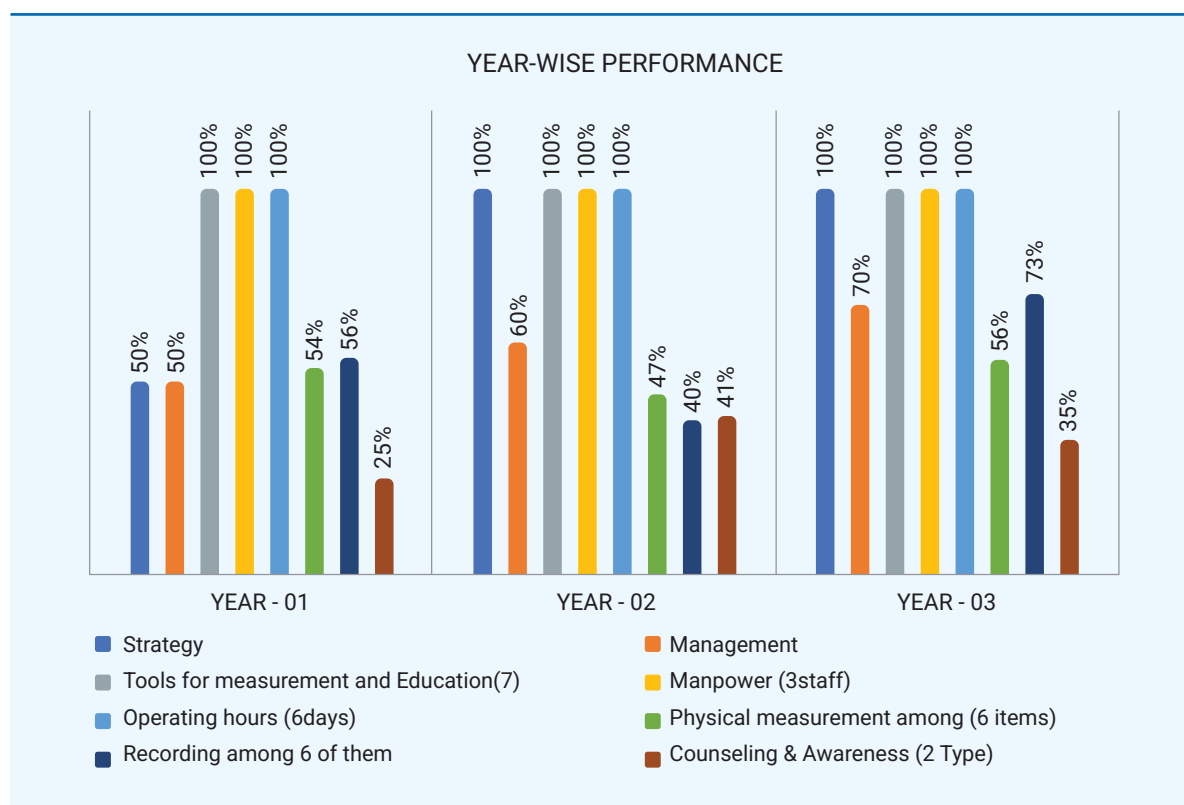
5.9 Joint Monitoring Based On Objective Indicators by UHC & Project as Third Eyes: as Tool for Health System Strengthening:

Non-Communicable Diseases (NCDs) represent a major public health challenge in Bangladesh, demanding both high-quality service delivery and effective governance mechanisms. While establishing NCD Corners at Upazila Health Complexes (UHCs) provides the structural platform for prevention, screening, and treatment, the mere presence of these facilities does not guarantee quality, equity, or continuity of care. To ensure that NCD Corners function effectively, a robust joint monitoring mechanism is essential.

Joint monitoring integrates the perspectives of health managers, frontline providers, community members, and independent stakeholders, thereby creating a transparent, accountable, and responsive system for NCD service delivery.

In the context of scaling the NCD-IV model, joint monitoring serves not only as an oversight mechanism but as a governance reform instrument—linking performance measurement, community accountability, and real-time problem-solving within a unified framework.

Joint monitoring is not limited to auditing resources or tallying patient numbers. Rather, it functions as a dynamic, problem-solving tool that evaluates service quality, identifies gaps in operational performance, and links facility outcomes with community expectations. By bridging



this gap, joint monitoring fosters mutual accountability, ensuring that health services are responsive to the needs of the population they serve, particularly vulnerable and marginalized groups.

Importantly, joint monitoring complements digital health integration by validating data quality, reviewing follow-up adherence, and assessing whether digital tracking mechanisms translate into real improvements in patient outcomes.

5.9.1 Objectives and Importance of Joint Monitoring:

The primary objectives of joint monitoring within NCD Corner operations include:

- Assessing service quality and coverage: Identifying whether NCD screenings, follow-ups, and counseling services reach all intended populations, including women, elderly, and socioeconomically disadvantaged individuals

- Ensuring continuity of care: Monitoring referral linkages between Community Clinics (CCs) and NCD Corners, as well as patient adherence to treatment schedules
- Evaluating resource availability: Checking the availability of essential medicines, diagnostic tools, and trained personnel, which are critical for uninterrupted service delivery
- Incorporating community feedback: Gathering inputs on waiting times, accessibility, informal costs, and patient satisfaction, which are often missed by routine reporting systems.



Joint Monitoring conducting with NCD corner Medical Officer

By systematically addressing these areas, joint monitoring ensures that facility-level investments translate into tangible health outcomes and equitable service access.

Additionally, joint monitoring enables early detection of service bottlenecks such as medicine stock-outs, referral delays, or staffing gaps allowing corrective action before these issues escalate into systemic failures.

5.9.2 Methodology of Joint Monitoring:

A typical joint monitoring process under the NCD-IV project involves:

- Team Composition:** Monitoring officers/health managers, CC staff, NCD Corner personnel, community representatives, and independent observers jointly participate in monitoring visits.
- Data Collection Tools:** Standardized checklists, patient interviews, observation of service delivery, and review of facility records are employed to gather both quantitative and qualitative data.

- c) **Community Engagement:** Joint monitoring integrates direct feedback from beneficiaries, ensuring that service delivery is aligned with actual needs rather than purely administrative expectations.
- d) **Problem-Solving Approach:** Identified gaps are discussed collectively during monitoring visits. Solutions focus on improving operational efficiency, resource allocation, and staff performance, avoiding blame-focused assessments.

This methodology transforms monitoring from a passive reporting exercise into an actionable, learning-oriented intervention.

Where digital systems are in place, monitoring teams also review electronic patient registries, follow-up compliance rates, SMS reminder effectiveness, and lost-to-care re-engagement performance—strengthening the alignment between governance oversight and digital health operations.

5.9.3 Key Areas Monitored:

Joint monitoring activities cover a broad range of operational domains:

- **Screening and Diagnostic Coverage:** Verification that routine BP, blood glucose, and other NCD screenings are conducted regularly and reach the targeted population.
- **Referral and Follow-up Mechanisms:** Evaluation of how effectively Community Clinics refer patients to NCD Corners and whether follow-up protocols are adhered to.
- **Medicine and Supplies Availability:** Monitoring the availability of essential drugs, consumables, and diagnostic reagents to ensure uninterrupted care.
- **Counseling and Patient Education:** Assessment of the quality of behavioral counseling, including dietary advice, lifestyle modification guidance, and tobacco cessation support.
- **Community Feedback Integration:** Listening to patient complaints, suggestions, and satisfaction levels, then using these insights to guide improvements in service delivery.

By systematically reviewing these areas, joint monitoring enables evidence-based adjustments that improve service quality and patient outcomes.

Special attention is given to equity indicators such as service utilization by women, elderly populations, low-income groups, and geographically isolated communities to ensure that NCD services do not widen existing health disparities.

5.9.4 Benefits for Health System Strengthening:

Joint monitoring contributes to health system strengthening in multiple ways:

- **Accountability and Transparency:** Community involvement ensures that facility staff are held accountable, and services are delivered equitably.
- **Evidence-Based Resource Allocation:** Monitoring data guides managers in reallocating medicines, diagnostic tools, and human resources to areas of greatest need.
- **Operational Efficiency:** Identification of redundant or ineffective activities allows NCD Corners to focus on high-impact services.
- **Enhanced Community Trust:** By actively addressing grievances and showing responsiveness, communities are more likely to engage with NCD services and adhere to follow-up schedules.

In this way, joint monitoring transforms static NCD service points into dynamic, learning-oriented platforms that continuously improve in response to field realities.

Over time, institutionalized joint monitoring can evolve into a performance-based management system, where facility improvements are tracked through measurable indicators linked to national NCD targets.

5.9.5 Policy and Advocacy Implications:

Institutionalizing joint monitoring offers a strategic pathway for sustainable NCD control in Bangladesh:

- **Linkage with National Strategies:** Joint monitoring should be formally embedded in DGHS and MoHFW NCD policies, ensuring alignment with NCD Action Plans, UHC targets, and SDG 3.4 (reducing premature NCD mortality).
- **Evidence-Driven Decision Making:** Insights from joint monitoring inform planning, budgeting, and operational adjustments at both district and national levels.
- **Promoting Equity:** Monitoring ensures that services reach marginalized populations, addressing gaps in access and reducing health disparities.
- **Learning and Capacity Building:** Findings highlight training needs, resource constraints, and best practices, enhancing the overall capacity of health personnel.

To ensure sustainability, joint monitoring should be supported by formal guidelines, defined reporting cycles, integration with national health information systems, and dedicated budget allocations.

Without joint monitoring, even well-equipped NCD Corners risk uneven service delivery, missed prevention opportunities, and inefficient resource use. Conversely, institutionalized monitoring converts facility investments into measurable, people-centered health outcomes, reinforcing Bangladesh's commitment to quality, accountable, and equitable primary healthcare.

Joint monitoring is a critical governance tool that ensures NCD Corners function efficiently, equitably, and in alignment with community needs. By integrating facility assessment, community feedback, and actionable guidance, joint monitoring strengthens service quality, accountability, and continuity of care.

For Bangladesh, scaling and institutionalizing joint monitoring across all Upazila Health Complexes would create a standardized accountability framework essential for reducing premature NCD mortality, optimizing public investment, and translating infrastructure expansion into measurable population-level health gains.

Chapter-6: Observed Outcomes of the Integrated Approach

The integrated approach has led to measurable improvements in service delivery, health outcomes, and patient behavior, particularly among vulnerable populations.

6.1 Improved Service Delivery and Access

Strengthened linkages between community platforms and health facilities, improving access to NCD services

Increased utilization of Community Clinics (CCs) and NCD corners at Upazila Health Complexes (UHCs)

Improved referral and follow-up systems, supporting continuity of care

Strengthened joint monitoring and data use, improving service quality and accountability

6.2 Improved Health Outcomes

Improved control of blood pressure and blood glucose levels

Increased early detection of NCDs and reduced late-stage presentation

6.3 Behavioral Change and Self-Management

Improved awareness of NCD risk factors and prevention

Increased adherence to treatment and follow-up

Positive lifestyle changes, including smoking cessation

These outcomes demonstrate that the integrated approach has strengthened continuity of care, improved patient self-management, and enhanced access to services, contributing to the prevention of disease progression.



Monitoring follow-up patients to assess health improvement and behavioral changes.

Chapter-7: Comprehensive Policy Recommendations for Integrated NCD Management

To scale and institutionalize the NCD-IV model and similar integrated approaches, a system-based policy framework is required. Considering the increasing burden of multi-morbidity, environmental risks, and fragmentation of services, the following strategic actions are recommended to strengthen prevention, continuity of care, cross-sectoral coordination, and long-term sustainability.

7.1 Expansion and Institutionalization of Integrated Multi-Morbidity Management

- Expand NCD services in primary healthcare to include, chronic respiratory diseases, cancers, and arsenic-related conditions.
- Institutionalize an integrated NCD platforms at Upazila Health Complexes (UHCs) to reduced service fragmentation and treatment drop-out.
- Strengthen two-way referral systems between NCD Corners and other departments to ensure coordinated care.
- Provide basic NCD training to all healthcare staff across departments to support early detection and continuity of care.
- Develop standardized protocols for multi-morbidity management across district-, upazila, and union-level facilities.

7.2 Strengthening the NCD Workforce at the Upazila Level

- Establish a dedicated NCD workforce structure at the upazila level through a dual-team approach, including field-level teams to provide counseling on risk reduction, lifestyle modification, tobacco cessation, salt reduction, healthy diet, and physical activity.
- At NCD Corners, Community Clinics (CCs), and Union Sub-centers, provide continuous training on screening, counseling, referral management, digital systems, identification of occupational risks, and multi-morbidity management.
- Clearly define coordination mechanisms between Community Clinics and NCD Corners, ensuring regular supervision.
- Integrate patients from other service points into a unified digital NCD registry and strengthen performance-based supervision and mentoring to improve quality and accountability.



A group counseling session conducting by a SSN Infront of NCD corner

7.3 Institutionalization of Patient Tracking, Follow-up and Re-engagement Systems

- Develop mechanisms to identify patients who miss scheduled follow-up, distinguish those receiving care elsewhere from those completely disconnected, and ensure continued access to services
- Introduce interoperable digital patient record systems across Community Clinics, NCD Corners, and higher-level facilities with regular supervision.
- Introduce automated reminders, community based communication, and volunteer-assisted follow-up to reduce drop-out and ensure continuity of care.
- Strengthen linkages between communities and health facilities to enable rapid patient re-engagement.



Chief executive of the project & data expert is observing digital service system in a NCD corner

- Integrate digital NCD registries into the national health information system.
- Develop clear protocols to re-engage patients who have discontinued treatment.

7.4 Improvement of Facility Environment and WASH and Infection Prevention:

Improving the environment particularly water, sanitation, hygiene (WASH) essential for effective NCD management.



A person with disable (PWD) patient using disable friendly toilet facility in hospital privilege provided by AAN, Batiaghata UHC, Khulna

Ensuring accessible and adequate WASH facilities is particularly important for maintaining regular follow-up among NCD patients, especially for women, the elderly, and persons with disabilities, as well as for patients requiring frequent facility use, such as those with diabetes.

This approach is informed by field experience, including the establishment of “WASH Corners” in 5 out of 9 Upazila Health Complexes in Khulna, along with safe water supply systems, which improved service accessibility and user satisfaction.

- Strengthen water, sanitation, and hygiene (WASH) in health facilities as a core component of NCD management
- Ensure accessible and inclusive facility environments for women, the elderly, and persons with disabilities
- Integrate infection prevention measures to protect patients at higher risk of severe outcomes.
- Incorporate WASH compliance indicators into routine supervision and joint monitoring frameworks.

7.5 Addressing Arsenic Risk through Cross-Sectoral Coordination

- Strengthen coordination across the Department of Public Health Engineering, the Department of Agricultural Extension, Local Government Institutions, and the health sector.



A patient attendant collecting safe drinking water in hospital privilege provided by AAN, Terokhada UHC, Khulna

- Raise community awareness to reduce arsenic exposure from food and water.
- Integrate arsenic mitigation activities with NCD and climate resilience.
- Establish inter-ministerial coordination platforms.

7.6 Strengthening Joint Monitoring, Data Use, and Accountability

- Institutionalize upazila level NCD monitoring system.
- Develop unified indicators for screening, follow-up, treatment adherence, equity, and environmental risk.
- Conduct joint monitoring involving health authorities, community representatives, and relevant stakeholders.
- Use district- and upazila-level data for context-specific planning and decision-making.
- Link monitoring results to performance evaluation and resource allocation.

7.7. Strengthening Community and School-Based Prevention Activities

- Engage trained volunteers in awareness raising, early detection, follow-up, and emergency referral.
- Promote the participation of women in community-level activities.
- Integrate NCD prevention into the secondary school curriculum and strengthen dissemination of information on NCD risks, prevention measures, and services through teachers during classroom sessions.
- Introduce peer education alongside NCD-related interventions.
- Established standardized training and certification systems for volunteers.

7.8. Ensuring Sustainable Financing, Equity and Climate Resilience

- Ensure an uninterrupted supply of essential medicines.
- Introduce financial protection measures for low-income populations.
- Allocate targeted budgets for vulnerable and underserved areas.
- Ensure continuity of services during emergencies and disasters.
- Promote public–private partnerships.
- Integrate NCD financing into the national health expenditure framework.

7.9 Strengthening Public–Private–Community and Multi-Sectoral Partnerships

- Strengthen collaboration among local government, NGOs, civil society, academic institutions, and the private sector.
- Facilitate data sharing, research, and capacity-building
- Align NCD efforts with food system, environment, education, and local governance sectors.
- Establish partnership agreements with clear accountability structures.

7.10 Key Strategic Outcomes

This integrated policy framework will :

- Enable a shift from disease- specific to multimorbidity-based management
- Reduce service fragmentation through strengthened referral systems and digital tracking
- Address environmental and arsenic-related risks
- Improve WASH facilities in primary healthcare, ensuring inclusive and infection-preventive environments
- Institutionalize joint monitoring and data-driven planning
- Improve equitable access to services, particularly for vulnerable populations
- Accelerate progress toward achieving SDG 3.4
- Support the development a sustainable, prevention-oriented, and digitally enabled health system.



Led by Prof. Dr. Robed Amin, the Line Director of NCDC Programme visits Dumuria Hospital to review strategic outcomes and observe the implementation of NCD services.

Chapter-8: Priority Actions for Implementation and Scale-Up

8.1 Institutionalize Community-Led and School-Based NCD Programs

- **Community Volunteers Integration:** Community volunteers should be formally integrated into the national NCD strategy to ensure continuous outreach, awareness, and follow-up at the grassroots level.
- **School-Based Modules:** NCD prevention and health promotion modules should be mainstreamed into secondary school curricula to instill healthy behaviors early.
- **Budget Allocation for Mobilization:** Dedicated funding should be allocated for community mobilization activities, including awareness campaigns, women's group sessions, and health camps.



Prof. Hiroshi Yokota, representative director of Japan checking outcome from students, Terokhada, Khulna

8.2 Expand Digital NCD Systems Nationwide

- **Interoperable Digital Records:** Deploy interoperable digital patient record systems to all Upazila Health Complexes (UHCs) and Community Clinics (CCs), allowing secure, accurate, and accessible data collection.
- **Real-Time Data Access:** Enable real-time access to patient information for referrals, follow-ups, and decision-making.
- **Data-Driven Planning:** Use aggregated patient and community health data to inform district-level planning, resource allocation, and forecasting.

8.3. Strengthen Medicine Supply and Refill Systems

- **Uninterrupted Essential Medicines:** Ensure that NCD Corners and Community Clinics have a consistent supply of essential medicines.
- **Targeted Funding for Vulnerable Areas:** Allocate special funds to address supply challenges in coastal, remote, and disaster-prone regions.
- **Conditional Subsidies:** Consider conditional medicine subsidies for marginalized and high-risk groups.

8.4. Enhance Joint Monitoring and Local Accountability

- **Unified Monitoring Indicators:** Develop standardized indicators for NCD service delivery, patient follow-up, and preventive outreach.
- **Formalized Joint Monitoring:** Institutionalize joint monitoring between Upazila Health authorities, Community Clinics, and community platforms.
- **Reporting and Feedback:** Regularly report monitoring findings to district-level coordination committees.

8.5 Prioritize Coastal and Vulnerable Populations

- **Satellite Clinics and Outreach Points:** Establish satellite clinics and mobile health points in hard-to-reach areas.
- **Female Volunteer Recruitment:** Recruit and train women volunteers to engage marginalized households.
- **Special Budget Allocation:** Allocate dedicated budgets for disaster-prone saline belt areas.

8.6. Promote Public–Private–Community Collaboration

- **Partnerships:** Facilitate collaboration with NGOs, private hospitals, and civil society organizations.
- **Data Sharing and Capacity Building:** Encourage secure sharing of data and joint capacity-building initiatives.
- **Joint Awareness and Screening Campaigns:** Promote community-centered campaigns and screening camps.

8.7. Establish Systematic Follow-Up and Outreach Mechanisms for Patients Lost to Care

- **Lost-to-Follow-Up Tracking System:** Develop a structured tracking mechanism within digital NCD registries to identify patients who miss scheduled appointments or discontinue treatment.
- **Community-Based Outreach Response:** Activate community volunteers and frontline health workers to conduct home visits, phone follow-ups, and community tracing for patients lost to care.
- **Risk-Based Prioritization:** Prioritize high-risk patients (e.g., uncontrolled hypertension, diabetes with complications) for immediate outreach and re-engagement in care.
- **Re-Enrollment and Continuity Protocols:** Establish clear re-enrollment guidelines to ensure that patients returning to care are smoothly reintegrated into the treatment and monitoring system without administrative barriers.
- **Performance Indicators for Retention in Care:** Introduce national retention-in-care indicators to monitor follow-up completion rates and reduce long-term drop-out.

8.8 Priority Strategic Actions to Accelerate Impact

Provide scope to include additional NCDs beyond the two primary conditions

Although hypertension and diabetes are key focus areas, allowing space to address other NCDs, including arsenicosis, would support more integrated prevention and management.

Many patients suffer from multiple NCDs, and this trend is expected to increase. In addition, most NCDs share common risk factors, meaning that prevention and management measures are largely similar regardless of whether the target diseases are narrowly or broadly defined.

If patients with other NCDs are referred to separate departments, this may create additional barriers and increase the risk of treatment drop-out. Since NCDs often influence one another, managing them in an integrated manner can reduce the burden on patients and help prevent complications and disease progression.

8.8.1 Establish systems to identify and support patients who miss care

Even when patients miss scheduled visits or opportunities for consultation, it is important to distinguish between those who remain connected to appropriate medical care and those who do not. Strengthening follow-up and outreach mechanisms, particularly for the latter group, is essential to prevent disease progression and complications.

8.8.2. Improve the environment to enhance healthcare access for vulnerable populations

Improving access to healthcare for vulnerable groups requires not only strengthening service provision but also creating an environment that makes it easier to seek care. One important element is improving WASH (water, sanitation, and hygiene) conditions in health facilities, which form a foundation for both quality of care and service utilization.

In addition, NCD patients tend to be more susceptible to infections and to experience more severe outcomes. Since many patients gather in health facilities, the risk of infection increases, making adequate WASH conditions essential also from an infection-prevention perspective.

8.8.3 Strengthen joint monitoring to enable context-specific responses

Joint monitoring can contribute not only to understanding the current situation and identifying challenges at individual facilities, but also to capturing trends at the district or regional level. This helps reveal differences in challenges among sub-districts and enables more context-specific and effective interventions.

8.8.4 Strengthen collaboration with other departments within UHCs

While collaboration with maternity services is already recognized as important, NCD patients may also visit specialized departments due to complications such as kidney or eye diseases, or may require such care as their conditions progress. Establishing two-way referral systems and providing basic training on NCDs for staff in other departments—including maternity services—would help strengthen coordinated and comprehensive care.

8.8.5 Address arsenic exposure from both drinking water and food through multi-sectoral collaboration

Arsenic intake from drinking water as well as from food contributes not only to chronic arsenicosis but also to cancers, cardiovascular diseases, and diabetes. In recent years, increasing attention has been drawn to the significant contribution of rice consumption to total arsenic exposure in Bangladesh. Reducing arsenic-related health risks is therefore an important priority. Strengthening coordination among DPHE, DAE, and Local Government Institutions (LGIs) is essential to effectively reduce arsenic-related health risks, in line with the Government of Bangladesh's 2025 declaration on cross-ministerial collaboration.

8.9 Priority Strategic Actions to Accelerate Impact

- Expand NCD services beyond hypertension and diabetes to include conditions such as arsenicosis, supporting integrated multi-morbidity management
- Strengthen systems to identify and re-engage patients who miss follow-up, ensuring continuity of care
- Improve facility environments, particularly WASH, to enhance access and infection prevention
- Strengthen joint monitoring systems to enable context-specific planning and response
- Enhance coordination across departments within UHCs to support integrated care
- Address arsenic exposure from water and food through strengthened multi-sectoral collaboration

Chapter-9: Conclusion

NCD control is a national priority for Bangladesh to ensure universal access to healthcare. While government leadership remains essential, the role of development partners, stakeholders, and communities is equally critical.

The NCD-IV model demonstrates that an integrated, whole-of-society approach—combining community engagement, school-based initiatives, digital health systems, and continuity of care—can effectively address existing gaps and promote equitable and sustainable health outcomes.

Adopting the policy recommendations outlined in this report provides a practical pathway to institutionalizing and scaling up this model. Strengthening community participation and school-based prevention can enhance awareness, early detection, and preventive care, particularly among vulnerable populations, while fostering trust and ownership at the community level.

Digital health systems further reinforce this approach by enabling patient tracking, reducing drop-out, and supporting data-driven decision-making for effective planning and resource allocation.

At the same time, multi-sectoral collaboration across health, WASH, agriculture, education, and local government is essential to address the broader social and environmental determinants of NCDs and strengthen community resilience.

By prioritizing vulnerable populations—including women, persons with disabilities, and residents of climate-affected areas—this approach promotes equity and expands access to essential services.

Overall, institutionalizing the NCD-IV model provides a sustainable and scalable pathway to reduce premature NCD mortality, strengthen health system resilience, and accelerate progress toward achieving the Sustainable Development Goals.

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