















An Introduction to the NCDI Poverty Network and PEN-Plus Partnership

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NCDI Poverty Network

PEN-Plus Resolution at WHO AFRO Regional NCDI POVE Committee Meeting: Togo, August 23, 2022





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WHO Africa

African health ministers endorse new strategy to curb chronic disease crisis

23 August 2022

Lomé – With the burden of cardiovascular disease, mental and neurological disorders and diabetes rising in the region, African health ministers today endorsed a new strategy to boost access to the diagnosis, treatment and care of severe noncommunicable diseases.



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AFRO PEN-Plus Resolution Delegation Statements on YouTube: https:// www.youtube.co m/watch? v=5hyQtTNB1es



African health ministers endorse new strategy to curb chronic disease crisis

23 August 2022

Lomé - With the burden of cardiovascular disease, mental and neurological disorders and diabetes rising in the region, African health ministers today endorsed a new strategy to boost access to the diagnosis, treatment and care of severe noncommunicable diseases.

The health ministers, gathering for the Seventy-second session of the World Health Organization (WHO) Regional Committee for Africa in Lomé, Togo, adopted the strategy known as PEN-PLUS, A Regional Strategy to Address Severe Noncommunicable Diseases at First-Level Referral Health Facilities. The strategy supports building the capacity of district hospitals and other first-level referral facilities to diagnose and manage severe noncommunicable diseases early, resulting in fewer deaths.

Severe noncommunicable diseases are those chronic conditions that that lead to high levels of disability and death among children, adolescents and young adults if left undiagnosed or untreated. In the worst cases patients live no longer than a year after diagnosis. In Africa, the most prevalent severe noncommunicable diseases include sickle cell disease, type 1 and insulin-dependent type 2 diabetes, rheumatic heart disease, cardiomyopathy, severe hypertension and moderate to severe and persistent asthma.



"Africa is grappling with an increasingly hefty burden of chronic diseases whose severe forms are costing precious lives that could be saved with early diagnosis and care," said Dr Matshidiso Moeti, WHO Regional Director for Africa. "The strategy adopted today is pivotal in placing effective care within the reach of patients and marks a major step in improving the health and wellbeing of millions of people in the region."

In most parts of Africa, severe noncommunicable diseases are treated at tertiary health facilities, which are mostly in large cities. This exacerbates health inequities, as it puts care beyond the reach of most rural, peri-urban and lower-income patients, who can often only easily access district hospitals and local health centres. These facilities lack the capacity and resources to effectively manage severe noncommunicable diseases.

The strategy adopted today urges countries to institute standardized programmes to tackle chronic and severe noncommunicable diseases by ensuring that essential medicines, technologies and diagnostics are available and accessible at district hospitals. Only 36% of countries in the African region reported having essential medicines for noncommunicable diseases in public hospitals, according to a 2019 WHO survey. Governments should also ensure that people seeking care in private hospitals can access services for severe noncommunicable diseases.



Click image to enlarge

For Additional Information or to Request **Interviews, Please contact:**

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Sakuya OKA **Communications Manager** WHO Regional Office for Africa Cell: +242 06 508 1009 Email: okas@who.int

Related Links:

Malawi

PEN-Plus In Action Event Introduces a Global Partnership to Fight Severe, Chronic NCDs

September 21, 2022



FROM LEFT TO RIGHT, RAOUL BERMEJO (UNICEF), ANA MOCUMBI AND GENE BUKHMAN (NCDI POVERTY NETWORK), ABOUBACAR KAMPO AND REEM BATARSEH (UNICEF)

What is PEN-Plus?

Background

- For over a decade, WHO has been promoting the decentralization of integrated care for chronic diseases
 - Practical Approach to Lung Health (PAL)
 - Integrated Management of Adult and Adolescent Illness (IMAI)
 - Mental Health Gap Action Programs (mhGAP)
- WHO Package of Essential NCD (PEN) interventions
 - Primary health centers in low-resource settings
 - Adopted in 2010 by NCD and Mental Health cluster
 - Prevention and management of common NCDs
 - Uncomplicated hypertension, type-2 diabetes, chronic respiratory disease, and identification and referral of breast and cervical cancer

The remaining gaps in care

- In many countries no access to care for severe NCDs at district (first-level) hospitals: e.g.
 - Type-1 diabetes
 - Advanced Rheumatic heart disease, congenital heart disease, "malignant" hypertension, cardiomyopathies
 - Sickle cell disease
 - Diagnostic evaluation of severe chronic respiratory disease
 - Advanced malignancies

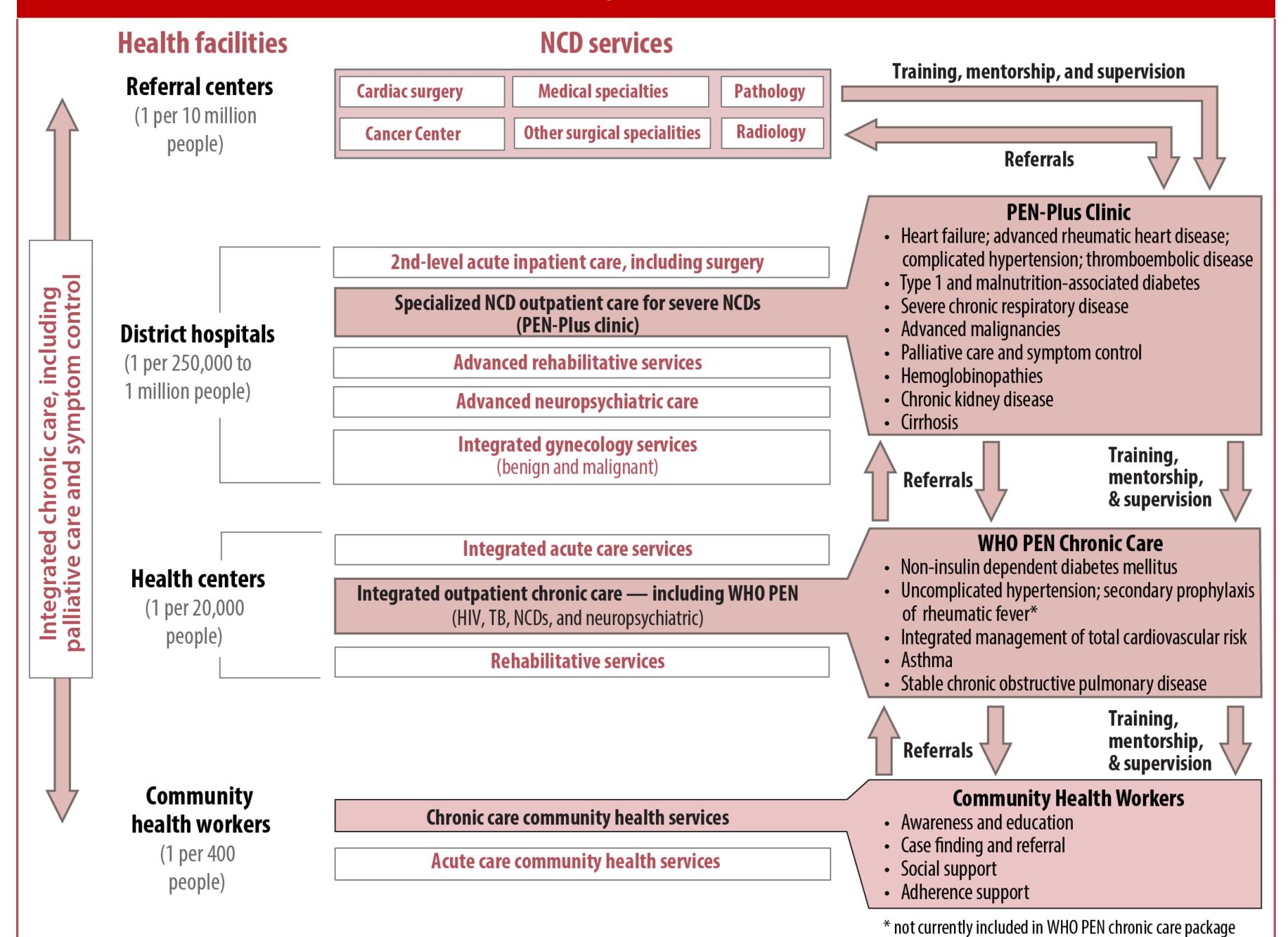
PEN-Plus clinics: a march towards UHC

- Decentralized, integrated, person-centered
- Severe diseases: lethal, disabling, disproportionately affect the poorest and youngest
- Rural majority: Increased access to care by overcoming geographic and financial barriers
- Promote decentralization: training, supervision, and mentorship of health center and community staff

	WHO PEN	PEN-Plus
Facility Level	Most Peripheral	First-Referral
Disease Prevalence	High	Low
Disease Severity	Low	High
Standardization	Standardized	Individualized
"Therapeutic Window"	Wide	Narrow
Training Model	Short, Didactic	Longer, Didactic + Clinical Practice

WHO PEN Conditions	PEN-Plus Conditions			
Type 2 Diabetes	Type 1 and Insulin-dependent diabetes			
Stage 1 and 2 Hypertension	"Malignant Hypertension" and Cardiomyopathies			
Asthma and COPD	Severe Asthma, COPD, and Bronchiectasis			
Asymptomatic Rheumatic Heart Disease	Advanced Rheumatic and Congenital Heart Disease			
	Sickle Cell Anemia			
	Cirrhosis			
	Advanced Kidney Disease			
	Palliative Care for Malignancies			

Expanded PEN Services in an Integrated NCD Services Model









Addressing Severe versus Common NCDs: Chronic Care Delivery Packages and Monitoring Frameworks in the WHO AFRO Region

Global Health Delivery Partnership Meeting Monday October 16, 2017

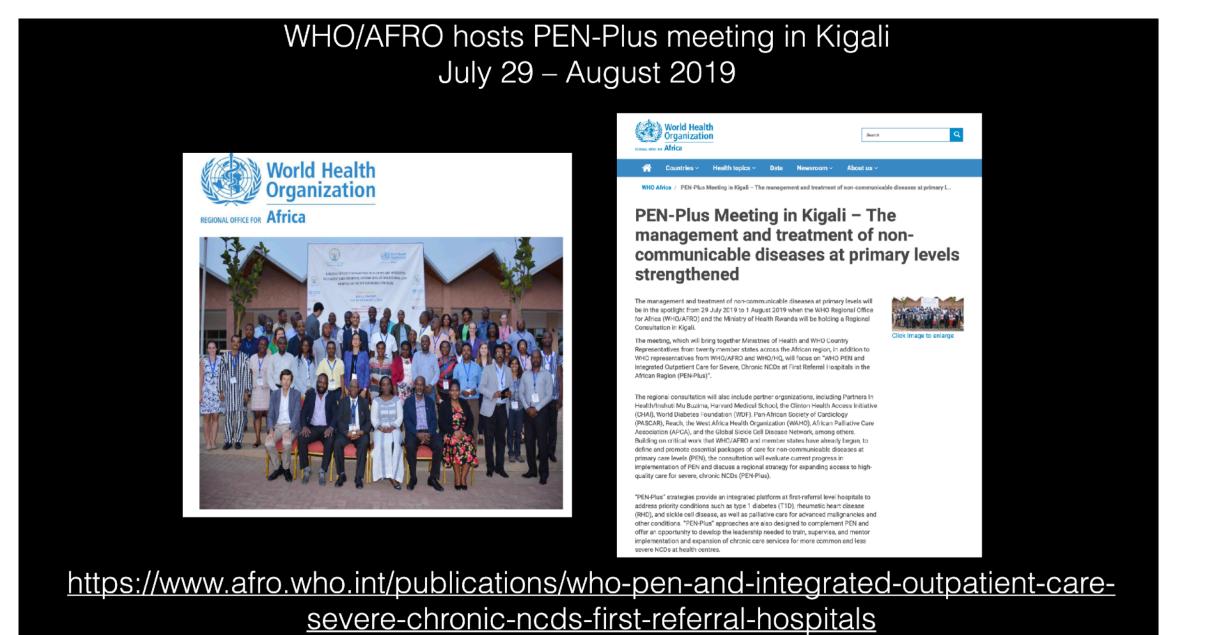


WHO African Regional Meeting, Dakar, 28 August 2018 "PEN-Plus" official side-event



http://ncdsynergies.org/harvard-medical-school-afro-session/





What is the NCDI Poverty Network and the PEN-Plus Partnership?

THE LANCET **The Lancet NCDI Poverty Commission:** bridging a gap in universal health coverage for the poorest billion "For the poorest of our world, non-communicable diseases and injuries (NCDIs) account for more than a third of their burden of disease; this burden includes almost 800 000 deaths annually among those aged younger than 40 years, more than HIV, tuberculosis, and maternal deaths combined." A Commission by The Lancet

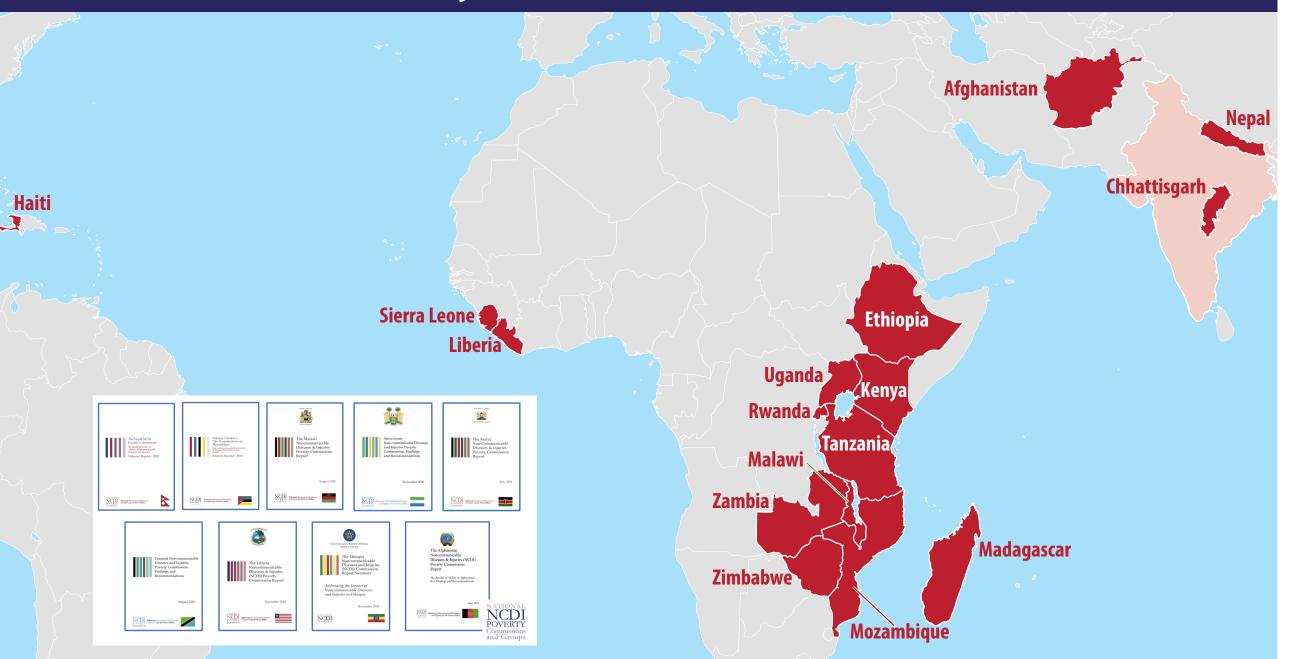
Lancet NCDI Poverty Commission Report Published and Launched

The landmark report of *The Lancet* Commission on **Reframing NCDs and Injuries for the Poorest** Billion has been published and is now available to be read and downloaded.

Access Report

The report was launched at a global virtual event on September 15. In the video below, Co-Chairs Gene Bukhman and Ana Mocumbi present the Commission's key findings and recommendations, followed by a discussion with Lancet editor **Richard Horton.**

National NCDI Poverty Commissions 2017-2020



The Lancet Commission on Reframing NCDs and Injuries for the Poorest Billion



Commission Co-Chair



Commission Co-Chair

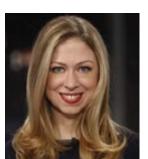




Anne Becker



Agnes Binagwaho





Julie Makani



Majid Ezzati



Gary Gottlieb



Indrani Gupta



Cristina Stefan





Lee Wallis



(deceased)

16 NCDI Poverty Commissions, 328 Commissioners

Rachel Nugent



Jaime Miranda







Nobhojit Roy













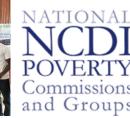




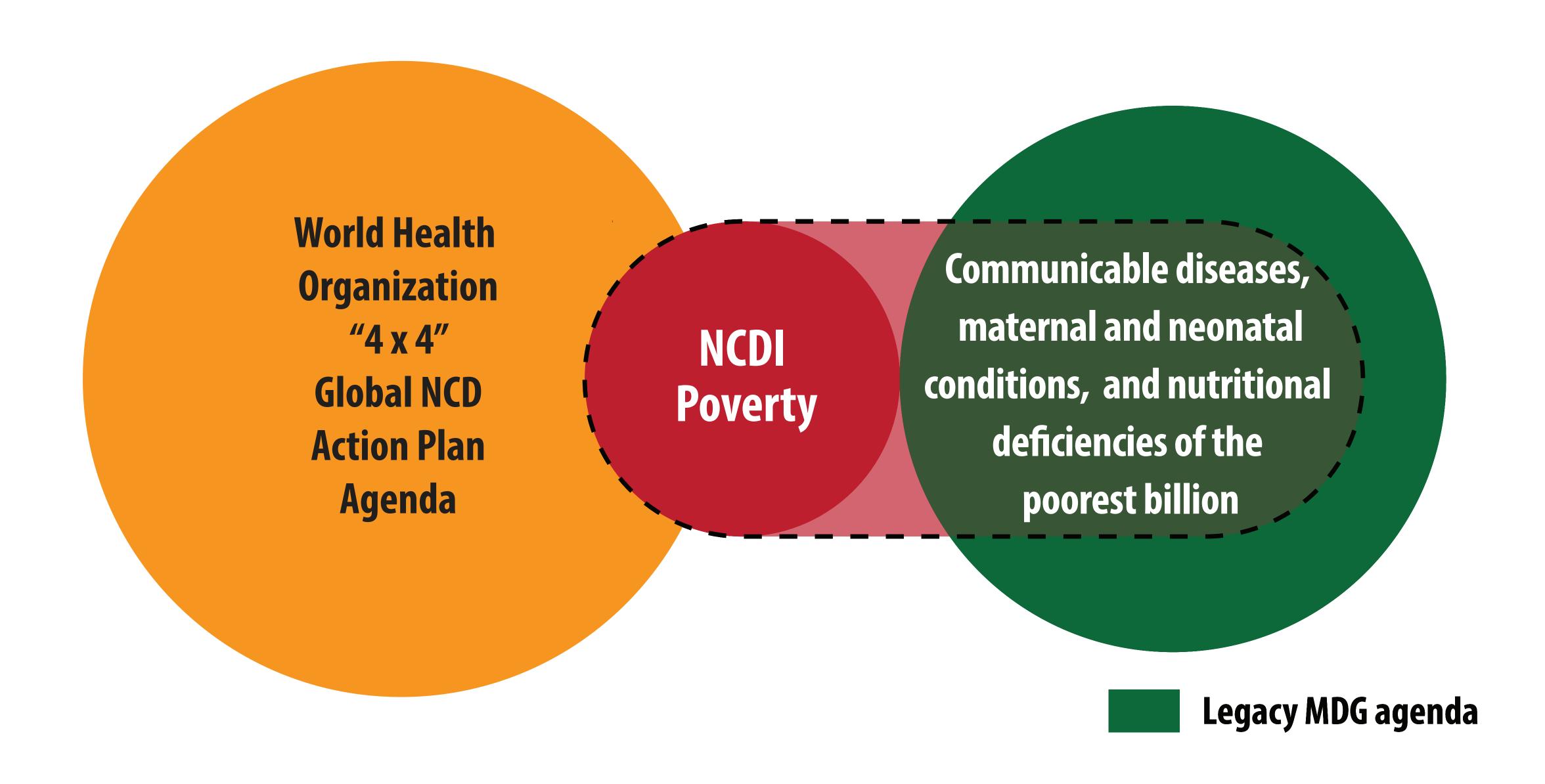




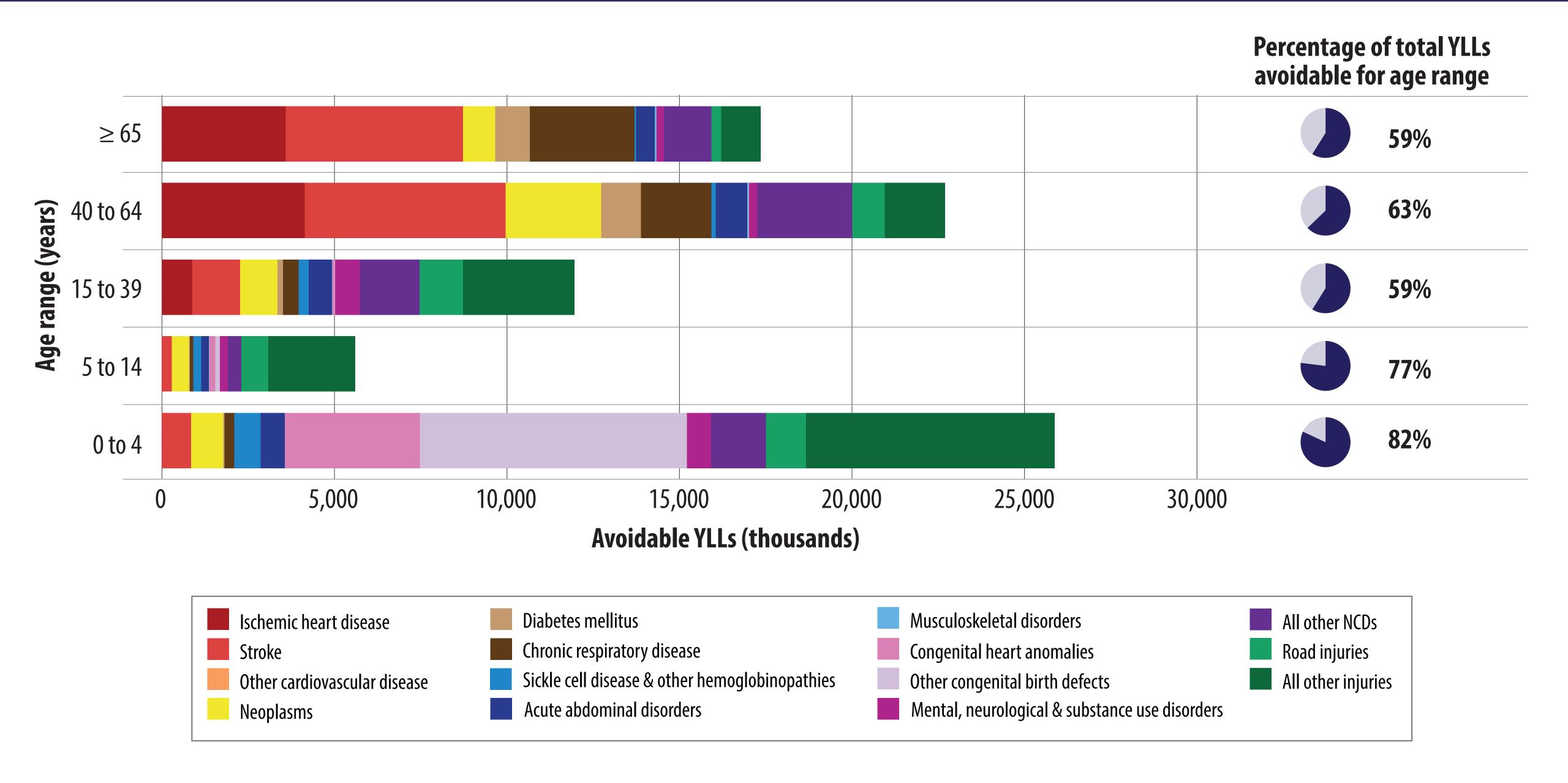




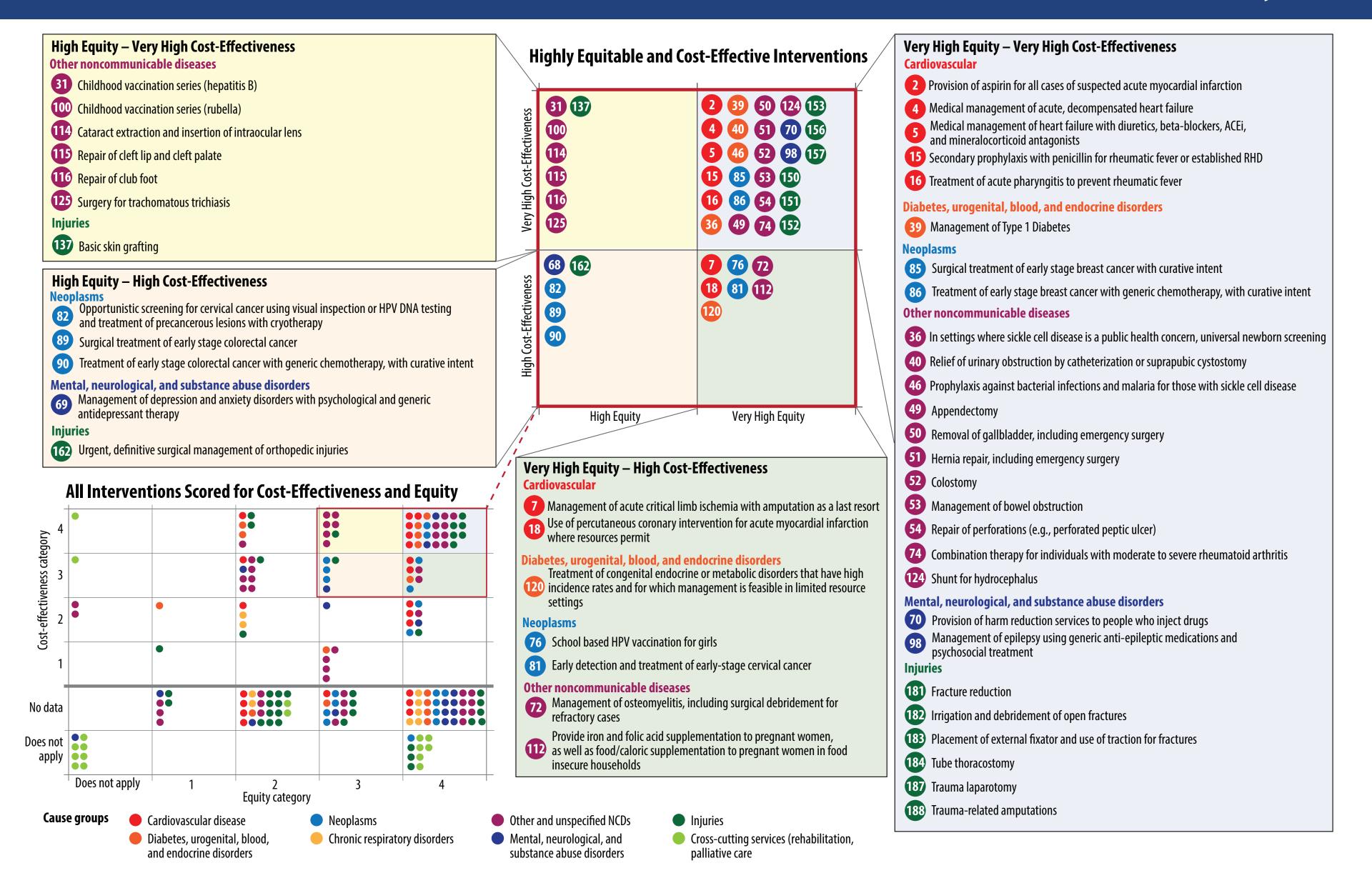
Visualizing NCDI Poverty



Avoidable years of life lost (YLLs) among the poorest billion



Health-sector interventions scored for cost-effectiveness and equity



Cost-effectiveness data from Disease Control Priorities, Third Edition¹ with additional equity analysis by this Commission. All interventions are identified and described in more detail in Appendices 2.B and 2.C.

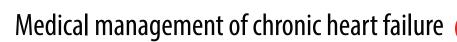
¹ Jamison DT, Gelband H, Horton S, Jha P, Mock CN, Nugent R. Disease Control Priorities, Third Edition (Volume 9). Washington, DC: World Bank Publications, 2018.

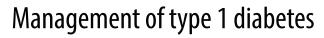
Examples of selected ICTs at different levels of the health system

Interventions prioritized by national NCDI Poverty Commissions*

Cause groups

- Cardiovascular disease
- Diabetes
- Neoplasms
- Chronic respiratory disorders
- Mental, neurological, and substance abuse disorders
- Other and unspecified NCDs
- Cross-cutting services (rehabilitation, palliative care)







- Injuries

Burr hole to relieve acute elevated intracranial pressure

Fracture reduction

Irrigation and debridement of open fractures

Placement of external fixator and use of traction for fractures

Tube thoracostomy

Trauma laparotomy

Trauma-related amputations

Additional highly equitable and cost-effective NCDI interventions**

Cardiac surgery for children and young adults with rheumatic heart disease

Cardiac surgery for children and young adults with correctable congenital heart disease



Referral Hospital

Specialized Surgical Team

Severe NCD Outpatient Team (PEN-Plus)

General Surgical Care Team

Management of chronic myeloid leukemia requiring imatinib therapy

Management of stable breast cancer requiring tamoxifen

Inhaled corticosteroids and bronchodilators for severe, persistent asthma and COPD

Management of post-valve replacement patients requiring warfarin

Management of advanced malignancies and other end-stage NCDs with pain and palliative care

Combination therapy for individuals with moderate to severe rheumatoid arthritis

Management of acute critical limb ischemia with amputation as a last resort

Relief of urinary obstruction by catheterization or suprapubic cystostomy

Appendectomy

Removal of gallbladder, including emergency surgery

Hernia repair, including emergency surgery

Colostomy

Management of bowel obstruction

Repair of perforations (e.g., perforated peptic ulcer, typhoid ileal perforation)

Management of osteomyelitis, including surgical debridement for refractory cases

Long term management of ischemic heart disease, stroke, and peripheral vascular disease

Secondary prophylaxis with penicillin for rheumatic fever or established RHD Low-dose inhaled corticosteroids and bronchodilators for asthma and COPD

> Screening and management of albuminuric kidney disease Screening and management of diabetes among at-risk adults

Management of epilepsy, including long-term management with generic anti-epileptics Management of depression and anxiety with psychological and antidepressant therapy



Chronic Care Team (PEN)

Prophylaxis against bacterial infections and malaria for those with sickle cell disease

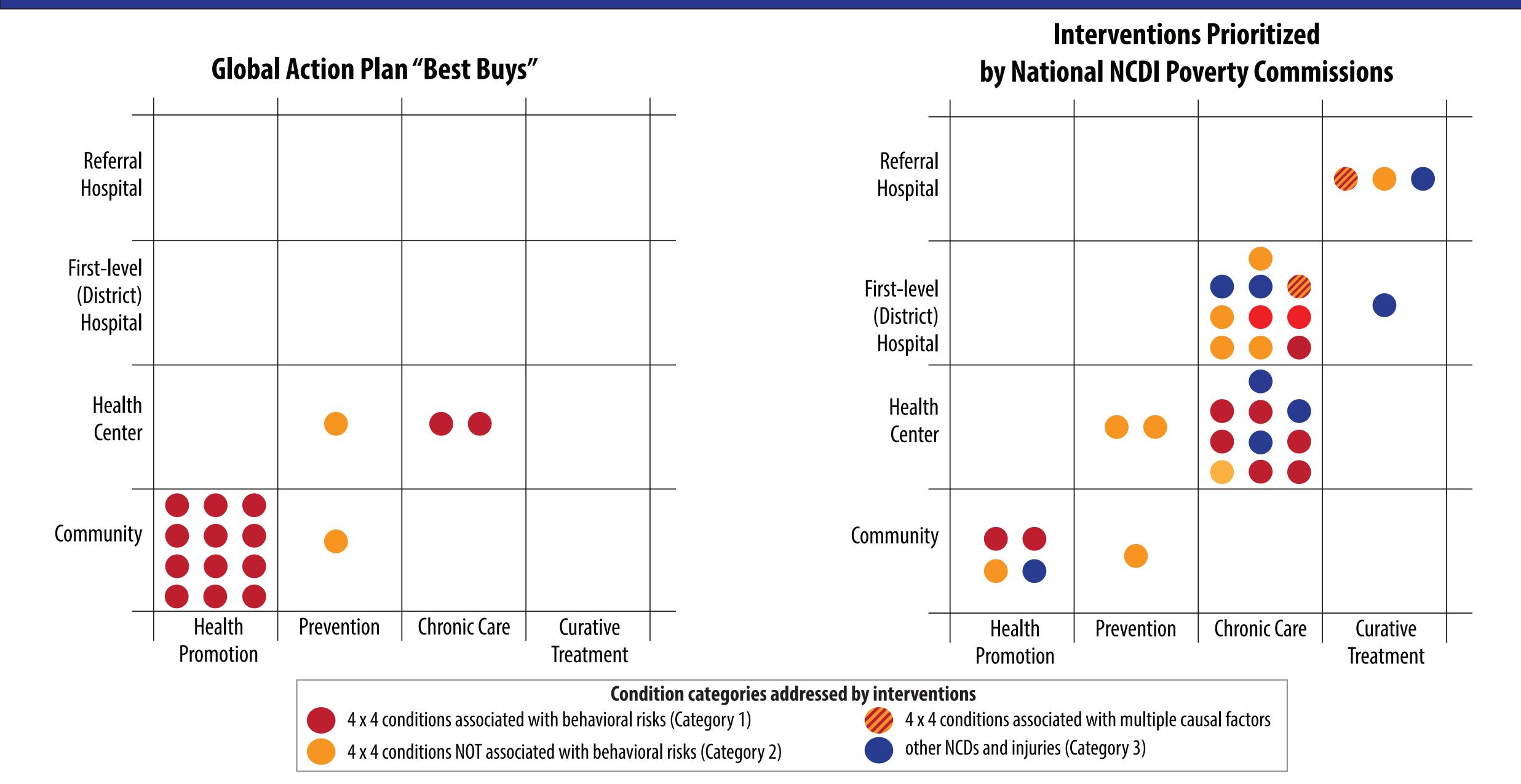
Provision of harm reduction services to people who inject drugs

Essential palliative care and pain control measures

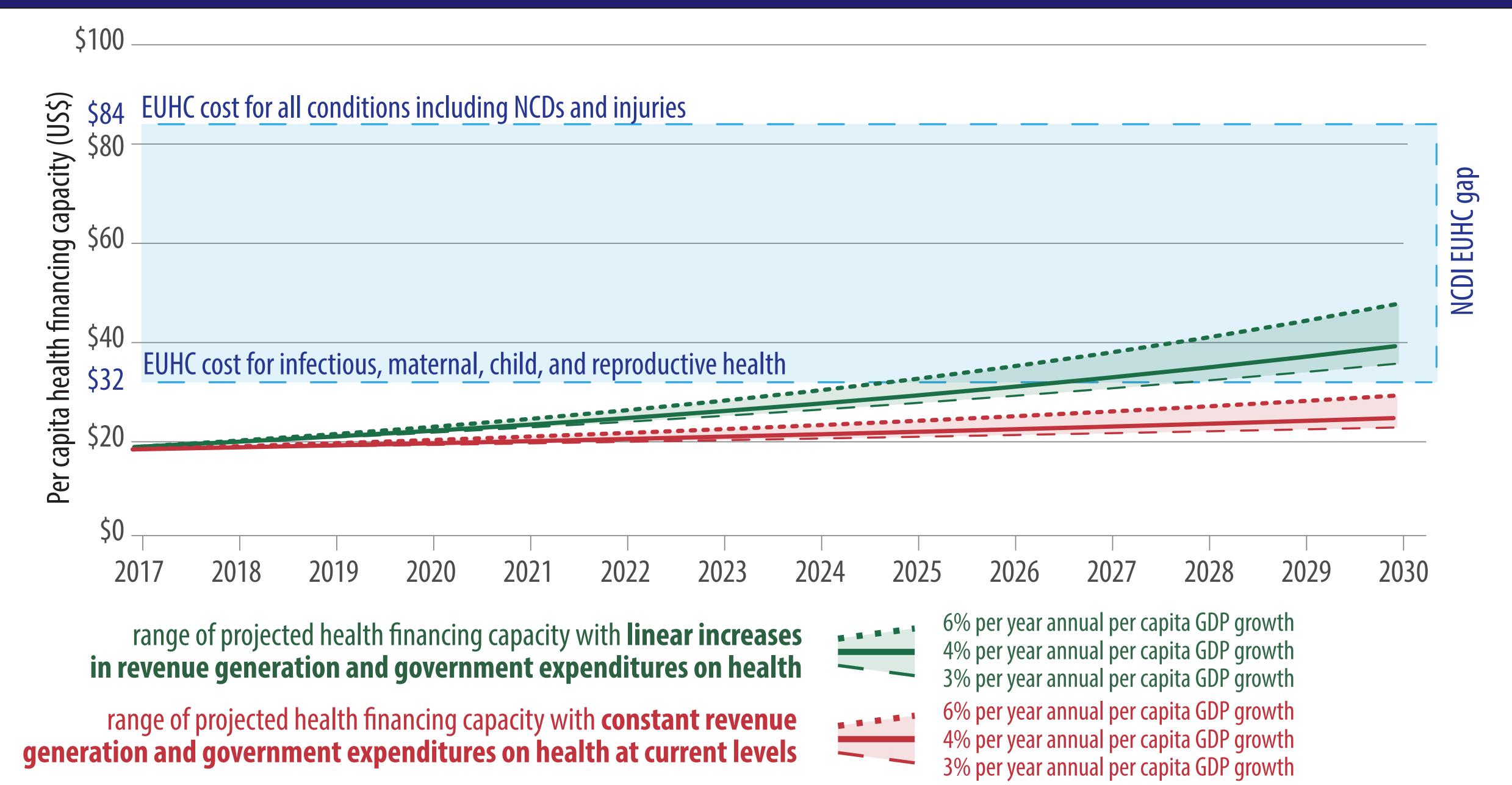
Psychosocial support and counseling services for individuals with serious health problems and their caregivers

Provide iron and folic acid supplementation to pregnant women, as well as food/caloric supplementation to pregnant women in food insecure households

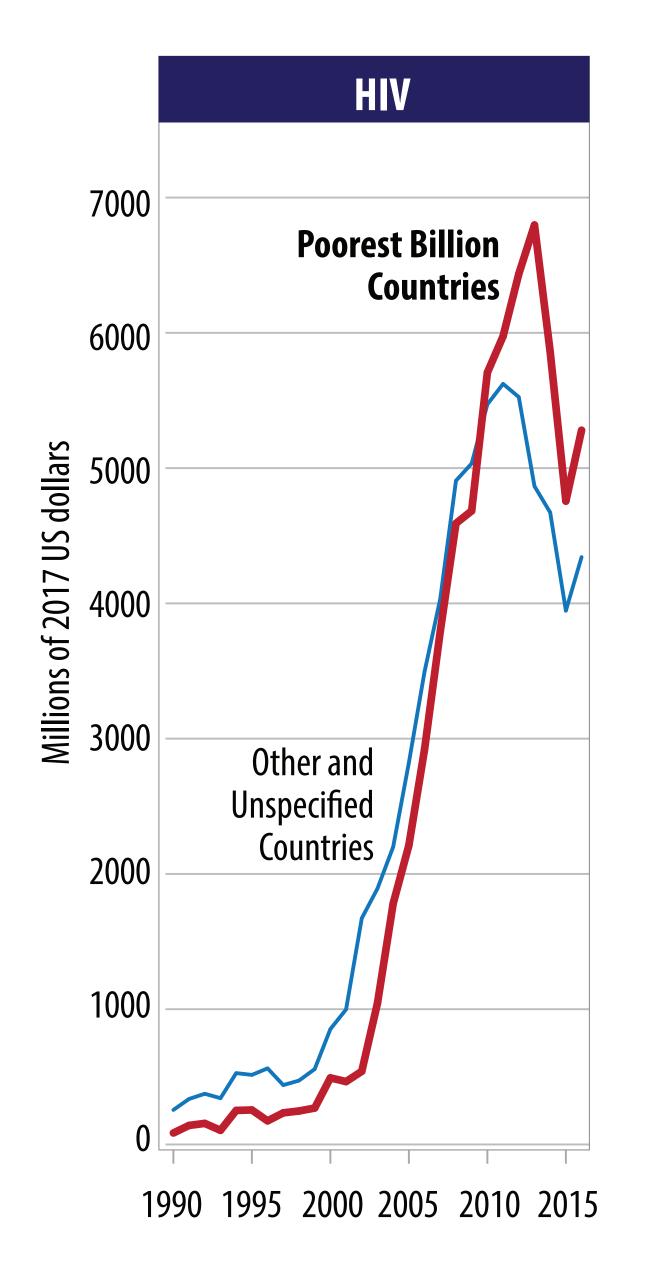
Global Action Plan "Best Buys" and Interventions Prioritized by National NCDI Poverty Commissions – a Complementary Agenda

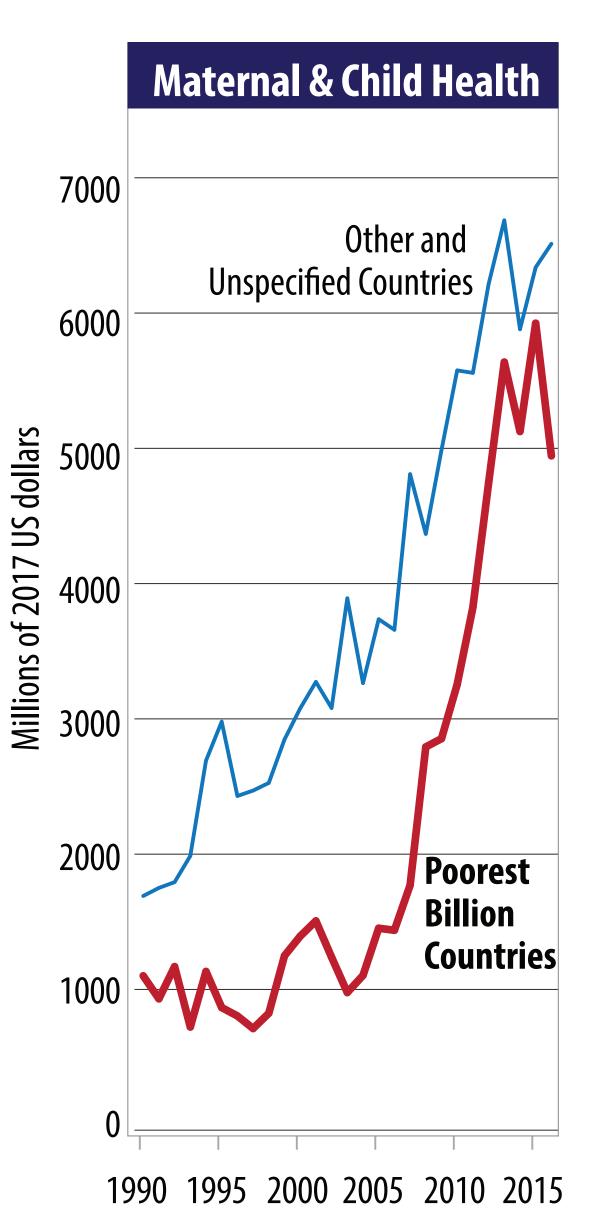


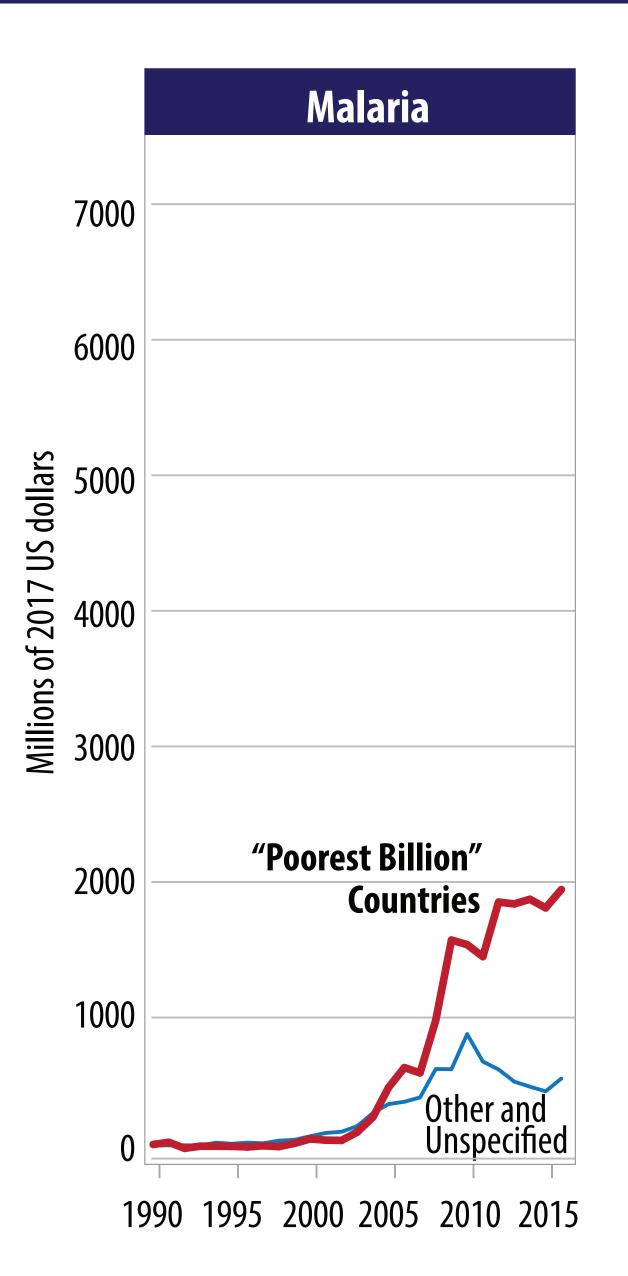
Projected health financing capacity vs. essential Universal Health Coverage (EUHC) costs in low-income Poorest Billion countries, 2017-2030

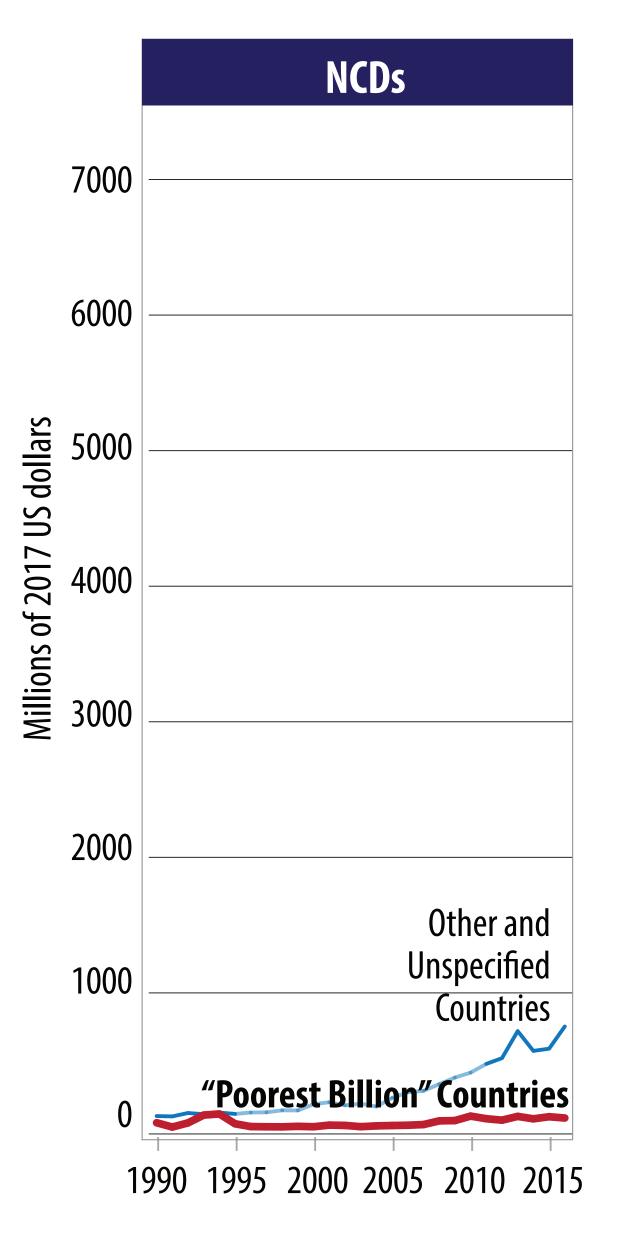


DAH to "poorest billion" and other countries by condition - 1990-2016











Bridging a Gap in Universal Health Coverage for the Poorest Billion

Phase 1
Situation analysis and priority-setting

Prioritize conditions and interventions

Phase 2
Delivery Model
Design

Develop models for integrated delivery of priority interventions

Phase 3
Initial
Implementation

Establish training sites and national operational plans

Phase 4
National Scale-up

Build financial and technical partnerships to support scale-up



#NCDIPoverty

www.ncdipoverty.org



NETWORK

NCDI Poverty Network Structure



Co-Secretariat

- Center for Integration Science/Harvard (USA) & IEM (Mozambique)
- Coordination, administration, resource mobilization, communications

Steering Committee

- Overall governance and strategy/objectives
- Representation of Network in communications and partnership-building

Advisory Group

 High-level regional and global institutional representatives advising the Steering Committee for global visibility, partnerships, and growth

Strategic Initiative #1

Expanding the NCDI Poverty Network

- Building an evidence base for NCDI Poverty at global, regional, national levels
- Network building and knowledge exchange for global advocacy

Strategic Initiative #2

Integration Science for NCDI Care Delivery

 Assessing and optimizing task integration for NCDI service delivery

Strategic Initiative #3

The PEN-Plus Partnership

- Supporting establishment of national training sites, service delivery centers, and operational plans
- Aligning resources and developing partnerships to support PEN-Plus

Strategic Initiative #4

The NCDI Poverty Fund

 Catalyzing funding for national and regional scale-up of PEN-Plus

Network Members (institutions)

National NCDI Poverty Commissions and Stakeholders at the Global, Regional, and National Levels

Steering Committee Members





Dr. Gene BukhmanSteering Committee Co-Chair
Director, Program Global NCDs and
Social Change, Harvard Medical School



Dr. Yogesh JainPublic Health Physician,
Chhattisgarh, Central India



Prof. Julie Makani
Associate Professor, Muhimbili
University of Health and Allied
Sciences, Tanzania



Dr. Santigie SesayDirector NCD and Mental Health,
Ministry of Health and Sanitation,
Sierra Leone



Dr. Jones Kaponda MasiyeDeputy Director of NCD and Mental
Health Clinical services,
Ministry of Health, Malawi



Dr. Ana Mocumbi
Steering Committee Co-Chair
Head, Division of NCDs, Mozambique
Institute of Health Education &
Research



Dr. Biraj Karmacharya
Department of Community
Programs at Dhulikhel HospitalKathmandu University Hospital



Dr. Mary Amuyunzu-NyamongoExec. Director of African Institute for Health & Development (AIHD), Kenya



Dr. Sharon KapambweAssistant Director, Cancer
Ministry of Health, Zambia



Dr. Aimée LuleboAssociate Professor, Department of Epidemiology and Biostatics,
Kinshasa School of Public Health

The NCDI Poverty Network's four-phase theory of change ...

Phase 1
Situation analysis and priority-setting

Prioritize conditions and interventions

Phase 2 Integration Science – Delivery Model Design

Develop models for integrated delivery of priority interventions

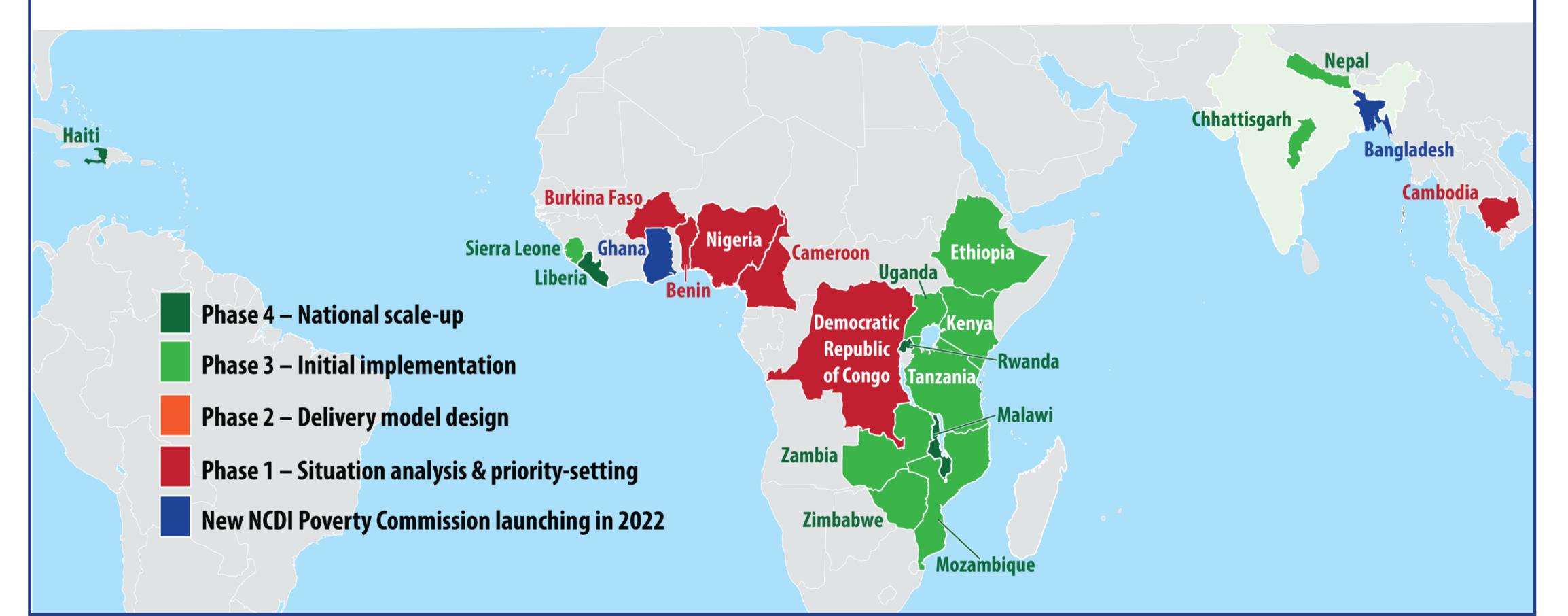
Phase 3
Initial PEN-Plus
implementation

Establish training sites and national operational plans

Phase 4
National Scale-up

Build financial and technical partnerships to support scale-up

and the status of Network member countries – June 2022





PEN-Plus Partnership

Global PEN-Plus Partnership



- June 23rd, 2021: initial PEN-Plus Partnership meeting with 31 institutions.
- 1. Reviewed and approved the TORs
- 2. Introduced Working Group Structure (training; M&E + research; advocacy and resource mobilization)
- WHO/AFRO PEN-Plus Regional Strategy Approved in August, 2022
- Sept 15, 2022: External PEN-Plus
 Partnership launch hosted by UNICEF
 in New York



Bridging a Gap In Universal Health Coverage For the Poorest Billion



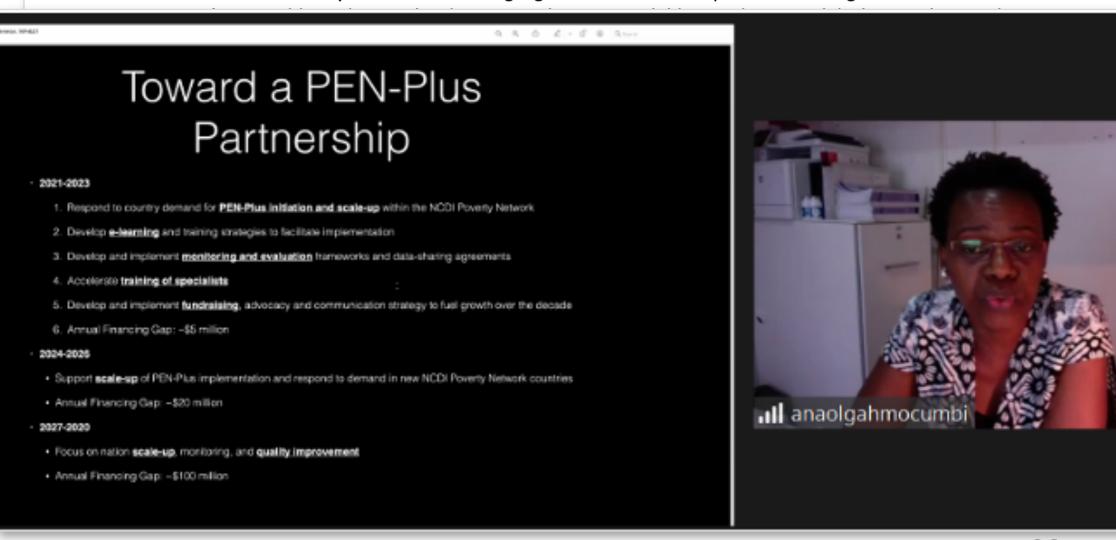
PEN-Plus Partnership An Initiative of the NCDI Poverty Network Draft Terms of Reference

21 June 2021

The following Terms of Reference ("ToR") are applicable to all members of the NCDI Poverty Network's PEN-Plus Partnership Initiative and describe the terms under which Institutions participate in the PEN-Plus Partnership and the support they can expect to receive as members. By accepting membership into the Pen-Plus Partnership, member Institution agree to adopt the ToR in Partnership activities.

Background

The Lancet NCDI Poverty Commission has highlighted the need for expanded financing and technical



A rapidly growing list...

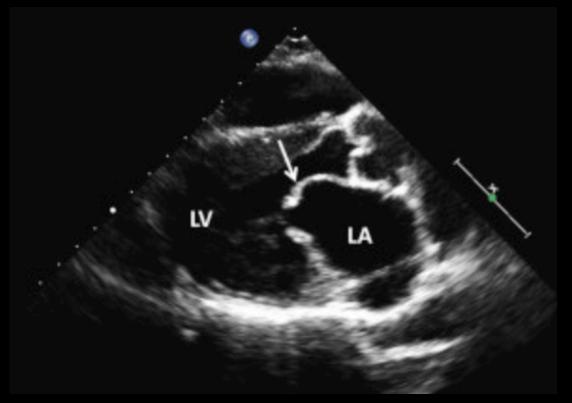


WG1 – E-Learning & Specialist Training	WG2 – M&E and Research	WG3 – Advocacy and Fundraising		
✓ ISPAD				
✓ American Academy of Pediatrics	✓ ISPAD	✓ American Heart Association		
✓ Guy's & St. Thomas Hospital Foundation	✓ Guy's & St. Thomas Hospital Foundation	✓ Children's HeartLink		
Trust	Trust	✓ Global ARCH		
✓ American Society of Hematology	✓ American Heart Association	✓ CUAMM		
✓ Children's HeartLink	✓ Life for a Child	✓ American Society of Hematology		
✓ Life for a Child	✓ Telethon Kids Institute	✓ Telethon Kids Institute		
✓ PATH	✓ Obiageli Nnodu (SPARCo – Sickle in Africa	✓ PATH		
✓ Obiageli Nnodu (SPARCo – Sickle in Africa	consortium)	✓ Global Sickle Cell Disease Network		
consortium)	✓ American Heart Association	✓ Isaac Odame (Sick Kids Toronto)		
✓ Global Sickle Cell Disease Network	✓ World Diabetes Foundation	✓ American Heart Association		
✓ Isaac Odame (Sick Kids Toronto)	✓ Kaushik Ramaiya (East African Diabetes)	✓ CUAMM		
✓ American Heart Association	Study Group)	✓ World Diabetes Foundation		
✓ CUAMM	✓ American College of Cardiology	✓ Beyond Type 1		
√ Kaushik Ramaiya	✓ CUAMM	✓ American College of Cardiology		
(East African Diabetes Study Group)	✓ REDAC Network	✓ Sickle Cell Aid Foundation		
✓ American College of Cardiology	✓ World Heart Federation	✓ REDAC Network		
✓ REDAC Network	✓ CHAI eSwatini	✓ World Heart Federation		
✓ World Heart Federation	✓ Boston Children's Hospital	✓ CHAI eSwatini		
✓ CHAI eSwatini	✓ Victoria Nembaware (SADaCC)	✓ Victoria Nembaware (SADaCC)		
✓ Victoria Nembaware (SADaCC)				
✓ Institutional partner confirmed	✓ Individual partner confirmed			



T1D
Type 1 Diabetes





SCD Sickle Cell Disease

RHD

Rheumatic and Congenital
Heart Disease

Why T1D, RHD, and SCD?

- Childhood Onset
- Lethal without treatment in the short term
- Passionate advocacy communities
- Benefit from shared infrastructure for: careful and chronic care, attention to detail, psychosocial and peer support, patient education, registration, and follow-up systems

Projected PEN-Plus initiation, implementation, scale-up and costs — 2021-2029

	Sites / Estimated cost in US\$	Cycle 1			Cycle 2			Cycle 3		
	Sites / Estimated Cost III 057	2021	2022	2023	2024	2025	2026	2027	2028	2029
1	Malawi	938,032	1,519,169	2,302,967	2,750,749	3,890,111	5,218,979	4,429,887	4,667,759	5,893,641
2	Liberia	565,265	912,160	1,216,741	995,117	1,098,557	1,707,193	1,440,930	1,705,525	1,955,544
3	Haiti	1,010,690	1,568,031	2,383,106	2,844,190	3,342,007	4,173,426	3,253,810	4,296,897	4,792,161
4	Sierra Leone	336,144	289,262	344,674	720,851	1,007,254	1,542,685	1,590,387	1,870,273	2,195,756
5	Mozambique	348,630	310,045	376,976	1,478,003	2,295,488	3,795,832	4,208,411	5,118,107	6,385,871
6	Uganda	342,957	299,581	360,080	2,632,055	3,965,548	6,399,816	6,887,191	8,131,756	10,291,896
7	Tanzania		342,993	297,020	354,475	5,565,992	8,302,872	11,919,378	13,687,946	14,871,228
8	Zimbabwe		343,678	291,720	342,246	4,516,307	6,479,222	8,798,580	9,655,768	9,772,219
9	Madagascar		336,278	288,289	342,419	2,518,694	3,589,527	5,550,281	5,699,953	6,483,634
10	Zambia		342,908	294,340	348,736	2,466,141	3,590,124	5,019,406	5,643,397	5,936,952
11	Kenya		337,353	286,673	337,797	9,859,296	13,941,552	18,883,033	20,908,834	21,370,658
12	Ethiopia		355,919	324,196	400,225	3,950,449	6,579,741	11,407,153	13,163,531	16,344,357
13	Nepal		361,039	334,946	420,252	2,302,205	3,931,962	6,870,547	7,260,473	8,238,871
14	Mali			340,514	293,915	350,283	1,646,776	2,393,560	3,749,338	3,914,044
15	Benin			334,298	281,740	330,225	3,635,035	4,972,589	6,514,583	7,053,622
16	Nigeria			340,255	292,792	348,109	22,296,069	32,726,521	46,183,162	52,583,970
17	Lesotho			338,226	286,938	337,473	586,768	796,950	1,059,898	1,146,488
18	Chhattisgarh State			376,368	365,829	469,644	1,181,950	2,063,590	3,484,155	4,349,604
19	Afganistan			343,361	303,436	368,044	1,880,529	2,880,564	4,737,349	5,219,709
20	Cambodia				334,178	282,658	332,344	3,798,373	5,237,051	6,946,314
21	Yemen				342,340	296,696	354,444	2,423,676	3,588,250	5,693,262
22	Sudan				335,093	291,573	350,782	2,459,971	3,602,016	5,763,827
23	Bangladesh				433,784	473,146	643,731	3,538,563	7,339,620	13,659,866
24	Lao				330,899	277,440	324,381	3,289,025	4,382,465	5,595,627
25	Guatemala				346,655	296,017	348,518	3,874,994	5,664,503	7,841,990
26	East Timor (Leste)					343,516	297,335	354,621	242,360	315,675
27	Burundi					340,273	292,858	348,233	1,095,019	1,567,578
28	Cameroon					338,354	287,936	339,513	4,647,530	6,595,476
29	Togo					341,808	293,886	348,884	885,358	1,261,602
30	DRC					342,958	294,419	348,857	9,139,926	13,428,041
	TOTAL	3,541,718	7,318,415	11,174,749	17,914,714	52,606,264	104,300,692	157,217,476	213,362,802	257,469,483

Phase 1: Planning, training site development, and initiation

Phase 2: Implementation and scale-up

Phase 3: Maintenance and evaluation

PEN-Plus Partnership

- Increase the number of the poorest children and young adults receiving high quality treatment for type 1 diabetes, rheumatic/ congenital heart disease, and sickle cell disease, and other severe chronic NCDs by a factor of 10 by 2030.
- Accomplish this by <u>training district hospital nurses</u> and other mid-level health workers to deliver <u>integrated services</u> normally provided by sub-specialist physicians at major referral centers.
- Find the resources needed to <u>finance implementation at scale</u> by elevating the <u>shared humanity</u> of those affected by these diseases in rich and poor countries and aligning the passion and excellence of vertical stakeholders around a <u>shared</u> <u>operational strategy</u> and delivery mechanism.

Stages of PEN-Plus Implementation

Stages 1: PEN-Plus initiation ~ 3 years

- 1. Develop training sites with cohorts of ~500-600 patients for a 250,000 person catchment area
- 2. Support from specialists to train (for example) in simplified echocardiographic strategies
- 3. Develop policies, guidelines, information systems, operational plan for national scale-up. Train additional specialists if needed. Develop systems for supervision, continuous professional development. Report on initial outcomes
- 4. Cost: ~\$300-500K USD annually depending on number of training sites

Stage 2: National Scale-Up of PEN-Plus ~3-6 years

- 1. Use training sites for precepted clinical training (minimally 3-month program)
- 2. Continue to train additional specialists if needed
- 3. Cost: depends on size of country and rate of implementation. ~\$25-50K in start-up costs per facility (250,000 catchment area) and ~\$50-100K in annual operational costs

Stage 3: Transition to domestic financing

- 1. quality improvement
- 2. transition to domestic financing depending on situation

Toward a PEN-Plus Partnership



2021–2023	2024 – 2026	2027 – 2030
 Respond to country demand for PEN- Plus initiation and scale-up within the NCDI Poverty Network 	 Support scale-up of PEN-Plus implementation and respond to demand in new NCDI Poverty Network countries 	 Focus on national scale-up, monitoring, and quality improvement Annual Financing Gap: ~\$100 million
 Develop e-learning and training strategies to facilitate implementation 	 Annual Financing Gap: ~\$20 million 	
 Develop and implement monitoring and evaluation frameworks and data- sharing agreements 		
 Accelerate training of specialists 		
 Develop and implement fundraising, advocacy and communication strategy to fuel growth over the decade 		
 Annual Financing Gap: ~\$5 million 		