

SUPPLEMENTARY MATERIALS**Section 1: Global Burden of Disease (GBD) Classification Levels**

Level 1	Level 2	Level 3	Level 4			
Communicable maternal, neonatal, and nutritional disorders	HIV/AIDS and tuberculosis	Tuberculosis				
		HIV/AIDS	HIV disease resulting in mycobacterial infection HIV disease resulting in other specified or unspecified diseases			
	Diarrhea, lower respiratory infections, meningitis, and other common infectious diseases	Diarrheal diseases		Cholera		
				Other salmonella infections		
				Shigellosis		
				Enteropathogenic E coli infection		
				Enterotoxigenic E coli infection		
				Campylobacter enteritis		
				Amoebiasis		
				Cryptosporidiosis		
				Rotaviral enteritis		
				Other diarrheal diseases		
				Typhoid and paratyphoid fevers		
			Lower respiratory infections			Influenza
						Pneumococcal pneumonia
		Hemophilus influenza type B pneumonia				
		Respiratory syncytial virus pneumonia				
		Other lower respiratory infections				
	Upper respiratory infections					
	Otitis media					
	Meningitis			Pneumococcal meningitis		
				Hemophilus influenza type B meningitis		
				Meningococcal infection		
			Other meningitis			

		Encephalitis		
		Diphtheria		
		Whooping cough		
		Tetanus		
		Measles		
		Varicella		
	Neglected tropical diseases and malaria	Malaria		
		Chagas disease		
		Leishmaniasis		
		African trypanosomiasis		
		Schistosomiasis		
		Cysticercosis		
		Echinococcosis		
		Lymphatic filariasis		
		Onchocerciasis		
		Trachoma		
		Dengue		
		Yellow fever		
		Rabies		
		Intestinal nematode infections	Ascariasis	
			Trichuriasis	
	Hookworm disease			
	Food-borne trematodiasis			
	Other neglected tropical diseases			
	Maternal disorders	Maternal hemorrhage		
		Maternal sepsis		
		Hypertensive disorders of pregnancy		
Obstructed labor				
Abortion				
Other maternal disorders				
	Preterm birth complications			

	Neonatal disorders	Neonatal encephalopathy (birth asphyxia/trauma)		
		Sepsis and other infectious disorders of the newborn baby		
		Other neonatal disorders		
	Nutritional deficiencies	Protein-energy malnutrition		
		Iodine deficiency		
		Vitamin A deficiency		
		Iron-deficiency anemia		
		Other nutritional deficiencies		
	Other communicable, maternal, neonatal, and nutritional disorders	Sexually transmitted diseases excluding HIV	Syphilis	
			Sexually transmitted chlamydial diseases	
			Gonococcal infection	
			Trichomoniasis	
			Other sexually transmitted diseases	
		Hepatitis	Acute hepatitis A	
			Acute hepatitis B	
			Acute hepatitis C	
			Acute hepatitis E	
Leprosy				
Other infectious diseases				
Non-communicable diseases	Neoplasms	Esophageal cancer		
		Stomach cancer		
		Liver cancer	Liver cancer secondary to hepatitis B	
			Liver cancer secondary to hepatitis C	
			Liver cancer secondary to alcohol use	
			Other liver cancer	
		Larynx cancer		
		Trachea, bronchus, and lung cancers		
		Breast cancer		
Cervical cancer				

		Uterine cancer	
		Prostate cancer	
		Colon and rectum cancers	
		Mouth cancer	
		Nasopharynx cancer	
		Cancer of other part of pharynx and oropharynx	
		Gallbladder and biliary tract cancer	
		Pancreatic cancer	
		Malignant melanoma of skin	
		Non-melanoma skin cancer	
		Ovarian cancer	
		Testicular cancer	
		Kidney and other urinary organ cancers	
		Bladder cancer	
		Brain and nervous system cancers	
		Thyroid cancer	
		Hodgkin's disease	
		Non-Hodgkin lymphoma	
		Multiple myeloma	
		Leukemia	
		Other neoplasms	
	Cardiovascular and circulatory diseases	Rheumatic heart disease	
		Ischemic heart disease	
		Cerebrovascular disease	Ischemic stroke Hemorrhagic and other non-ischemic stroke
		Hypertensive heart disease	
		Cardiomyopathy and myocarditis	
		Atrial fibrillation and flutter	
		Aortic aneurysm	
		Peripheral vascular disease	

		Endocarditis	
		Other cardiovascular and circulatory diseases	
	Chronic respiratory diseases	Chronic obstructive pulmonary disease	
		Pneumoconiosis	
		Asthma	
		Interstitial lung disease and pulmonary sarcoidosis	
		Other chronic respiratory diseases	
	Cirrhosis of the liver	Cirrhosis of the liver secondary to hepatitis B	
		Cirrhosis of the liver secondary to hepatitis C	
		Cirrhosis of the liver secondary to alcohol use	
		Other cirrhosis of the liver	
	Digestive diseases (except cirrhosis)	Peptic ulcer disease	
		Gastritis and duodenitis	
		Appendicitis	
		Paralytic ileus and intestinal obstruction without hernia	
		Inguinal or femoral hernia	
		Non-infective inflammatory bowel disease	
		Vascular disorders of intestine	
		Gallbladder and bile duct disease	
		Pancreatitis	
		Other digestive diseases	
	Neurological disorders	Alzheimer's disease and other dementias	
		Parkinson's disease	
Epilepsy			
Multiple sclerosis			

		Migraine		
		Tension-type headache		
		Other neurological disorders		
	Mental and behavioral disorders	Schizophrenia		
		Alcohol use disorders		
		Drug use disorders	Opioid use disorders	
			Cocaine use disorders	
			Amphetamine use disorders	
			Cannabis use disorders	
			Other drug use disorders	
		Unipolar depressive disorders	Major depressive disorder	
			Dysthymia	
		Bipolar affective disorder		
		Anxiety disorders		
		Eating disorders		
		Pervasive development disorders	Autism	
			Asperger's syndrome	
	Childhood behavioral disorders	Attention-deficit hyperactivity disorder		
		Conduct disorder		
	Idiopathic intellectual disability			
	Other mental and behavioral disorders			
	Diabetes, urogenital, blood, and endocrine diseases	Diabetes mellitus		
		Acute glomerulonephritis		
		Chronic kidney diseases	Chronic kidney disease due to diabetes mellitus	
			Chronic kidney disease due to hypertension	
			Chronic kidney disease unspecified	
		Urinary diseases and male infertility	Tubulointerstitial nephritis, pyelonephritis, and urinary tract infections	
Urolithiasis				
Benign prostatic hyperplasia				
Male infertility				

		Gynecological diseases	Other urinary diseases
			Uterine fibroids
			Polycystic ovarian syndrome
			Female infertility
			Endometriosis
			Genital prolapse
			Premenstrual syndrome
		Other gynecological diseases	
		Hemoglobinopathies and hemolytic anemias	Thalassemia
			Sickle-cell disorders
			G6PD deficiency
		Other endocrine, nutritional, blood, and immune disorders	Other hemoglobinopathies and hemolytic anemias
	Musculoskeletal disorders	Rheumatoid arthritis	
		Osteoarthritis	
		Low back and neck pain	
		Low back pain	
		Neck pain	
		Gout	
		Other musculoskeletal disorders	
	Other non-communicable diseases	Congenital anomalies	Neural tube defects
			Congenital heart anomalies
Cleft lip and cleft palate			
Down's syndrome			
Other chromosomal abnormalities			
Other congenital anomalies			
Skin and subcutaneous diseases		Eczema	
		Psoriasis	
		Cellulitis	

			Abscess, impetigo, and other bacterial skin diseases	
			Scabies	
			Fungal skin diseases	
			Viral skin diseases	
			Acne vulgaris	
			Alopecia areata	
			Pruritus	
			Urticaria	
			Decubitus ulcer	
			Other skin and subcutaneous diseases	
	Sense organ diseases			Glaucoma
				Cataracts
				Macular degeneration
				Refraction and accommodation disorders
				Other hearing loss
				Other vision loss
				Other sense organ diseases
				Oral disorders
				Dental caries
				Periodontal disease
			Edentulism	
			Sudden infant death syndrome	
Injuries	Transport injuries	Road injury	Pedestrian injury by road vehicle	
			Pedal cycle vehicle	
			Motorized vehicle with two wheels	
			Motorized vehicle with three or more wheels	
			Road injury other	
	Other transport injury			
		Falls		
	Drowning			

	Unintentional injuries other than transport injuries	Fire, heat, and hot substances	
		Poisonings	
		Exposure to mechanical forces	Mechanical forces (firearm)
			Mechanical forces (other)
		Adverse effects of medical treatment	
		Animal contact	Animal contact (venomous)
	Animal contact (non-venomous)		
	Unintentional injuries not classified elsewhere		
	Self-harm and interpersonal violence	Self-harm	
		Interpersonal violence	Assault by firearm
			Assault by sharp object
	Assault by other means		
Forces of nature, war, and legal intervention	Exposure to forces of nature		
	Collective violence and legal intervention		

Section 2: Selected Essential Universal Healthcare Interventions by DCP3 included in the study

DCP3 code	DCP3 intervention name	Associated GBD causes	Platform	Identified LMIC CEA Evidence	Identified high-income CEA Evidence
C34	Conduct larviciding and water-management programs in high malaria transmission areas where mosquito breeding sites can be identified and regularly targeted	Malaria; Dengue; Zika; Encephalitis; Yellow fever	Community	*	
C35	In all malaria-endemic countries, diagnosis with rapid test or microscopy (including speciation) followed by	Malaria	Community	*	

	treatment with ACTs (or current first-line combination)				
C4	Promotion of breastfeeding or complementary feeding by lay health workers	Nutritional deficiencies; Neonatal sepsis and other neonatal infections	Community		
C43	Early detection and treatment of Chagas disease, human African trypanosomiasis, leprosy, and leishmaniasis	Chagas disease; African trypanosomiasis; Leprosy; Leishmaniasis	Community	*	
C47	Exercise-based pulmonary rehabilitation for patients with obstructive lung disease	Chronic respiratory diseases	Community		*
C50	Parent training for high-risk families, including nurse home visitation for child maltreatment	Interpersonal violence	Community	*	
C51	WASH behavior change interventions, such as community-led total sanitation	Enteric infections	Community		*
C52	Cardiac and pulmonary rehabilitation programs	Chronic respiratory diseases; Rheumatic heart disease; Ischemic heart disease; Hypertensive heart disease; Non-rheumatic valvular heart disease; Cardiomyopathy and myocarditis; Atrial fibrillation and flutter; Aortic aneurysm; Peripheral artery disease; Endocarditis; Other cardiovascular and circulatory diseases	Community		*
C53	Early childhood development rehabilitation interventions, including	Autism spectrum disorders; Attention-deficit/hyperactivity disorder; Conduct disorder;	Community		

	motor, sensory, and language stimulation	Idiopathic developmental intellectual disability			
C56	Pressure area prevention and supportive seating interventions for wheelchair users	Injuries, Stroke; Musculoskeletal disorders; Parkinson's disease; Multiple sclerosis; Motor neuron disease	Community		
C58	Training and retraining for disorders of speech, swallowing, communication, and cognition	Stroke; Parkinson's disease; Multiple sclerosis; Motor neuron disease	Community		*
C59	Training, retraining, and exercise programs that address musculoskeletal injuries and disorders, including chronic low back and neck pain	Injuries; Musculoskeletal disorders	Community		*
FLH1	Detection and management of fetal growth restriction	Protein-energy malnutrition; Other maternal disorders; Other neonatal disorders	First-level hospital		
FLH10	Surgical termination of pregnancy by annual vacuum aspiration, dilation and curettage	Maternal abortion and miscarriage	First-level hospital	*	
FLH11	Full supportive care for severe childhood infections with danger signs	Lower respiratory infections; Urinary tract infections; Diarrheal diseases; Malaria; HIV/AIDS; Drug-susceptible tuberculosis; Multidrug-resistant tuberculosis without extensive drug resistance; Extensively drug-resistant tuberculosis; Zika; Dengue; Ebola	First-level hospital		
FLH12	Management of severe acute malnutrition associated with serious infection	Protein-energy malnutrition	First-level hospital	*	

FLH13	Early detection and treatment of early-stage cervical cancer	Cervical cancer	First-level hospital		*
FLH2	Induction of labor post-term	Maternal hemorrhage; Other maternal disorders; Maternal sepsis and other maternal infections; Maternal hypertensive disorders; Maternal obstructed labor and uterine rupture; Maternal abortion and miscarriage; Ectopic pregnancy; Indirect maternal deaths; Late maternal deaths; Neonatal encephalopathy due to birth asphyxia and trauma	First-level hospital		
FLH20	Management of acute coronary syndromes with aspirin, unfractionated heparin, and generic thrombolytic (when indicated)	Ischemic heart disease	First-level hospital	*	
FLH22	Management of acute exacerbations of asthma and COPD using systemic steroids, inhaled beta-agonists, and, if indicated, oral antibiotics and oxygen therapy	Chronic obstructive pulmonary disease; Asthma	First-level hospital		*
FLH27	In settings where sickle cell disease is a public health concern, universal newborn screening followed by standard prophylaxis against bacterial infections and malaria	Sickle cell disorders; Neonatal sepsis and other neonatal infections; Malaria	First-level hospital	*	
FLH46	Basic skin grafting	Fire, heat, and hot substances; Malignant skin melanoma; Decubitus ulcer	First-level hospital		

FLH15	Management of maternal sepsis, including early detection at health centers	Maternal sepsis and other maternal infections	First-level hospital	*	
FLH50	Tube thoracostomy	Tracheal, bronchus, and lung cancer; Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence.	First-level hospital		
FLH52	Compression therapy for amputations, burns, and vascular or lymphatic disorders	Fire, heat, and hot substances; Lymphatic filariasis	First-level hospital		
FLH53	Evaluation and acute management of swallowing dysfunction	Stroke; Lip and oral cavity cancer; Nasopharynx cancer; Other pharynx cancer; Esophageal cancer	First-level hospital		
FLH54	Fabrication, fitting, and training in the use of prosthetics, orthotics, and splints	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence	First-level hospital		*
H17	Referral of cases of treatment failure for drug susceptibility testing; enrollment of those with MDR-TB for treatment per WHO guidelines (either short or long regimen)	Multidrug-resistant tuberculosis without extensive drug resistance; HIV/AIDS; Multidrug-resistant tuberculosis without extensive drug resistance	First-level hospital		

H36	Fracture reduction and placement of external fixator and use of traction for fractures	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence	First-level hospital		*
HC1	Early detection and treatment of neonatal pneumonia with oral antibiotics	Lower respiratory infections; Neonatal sepsis and other neonatal infections	Health center		
HC13	Among all individuals who are known to be HIV positive, immediate ART initiation with regular monitoring of viral load for adherence and development of resistance	HIV/AIDS	Health center	*	
HC14	Psychological treatment for mood, anxiety, ADHD, and disruptive behavior disorders	Depressive disorders; Bipolar disorder; Anxiety disorders; Attention-deficit/hyperactivity disorder; Conduct disorder	Health center	*	
HC15	Management of complications following FGM	Sexual violence	Health center		
HC16	Post gender-based violence care, including counselling, provision of emergency contraception, and rape-response referral (medical and judicial)	HIV/AIDS and sexually transmitted infections; Depressive disorders; Anxiety disorders	Health center		
HC19	For individuals testing positive for hepatitis B and C, assessment of treatment eligibility by trained providers followed by initiation and monitoring of antiviral treatment when indicated	Acute hepatitis B; Acute hepatitis C; Cirrhosis and other chronic liver diseases due to hepatitis B; Cirrhosis and other chronic liver diseases due to hepatitis C; Liver cancer due to hepatitis B; Liver cancer due to hepatitis C	Health center	*	

HC23	Provider-initiated testing and counselling for HIV, STIs, and hepatitis, for all in contact with health system in high- prevalence settings, including prenatal care with appropriate referral or linkage to care including immediate ART initiation for those testing positive for HIV	HIV/AIDS and sexually transmitted infections; acute hepatitis B; Acute hepatitis C; Cirrhosis and other chronic liver diseases due to hepatitis B; Cirrhosis and other chronic liver diseases due to hepatitis C; Liver cancer due to hepatitis B; Liver cancer due to hepatitis C	Health center	*	
HC24	As resources permit, hepatitis B vaccination of high-risk populations, including healthcare workers, PWID, MSM, household contacts, and persons with multiple sex partners	Acute hepatitis B; Cirrhosis and other chronic liver diseases due to hepatitis B; Liver cancer due to hepatitis B	Health center	*	*
HC3	Management of preterm premature rupture of membranes, including administration of antibiotics	Maternal sepsis and other maternal infections; Indirect maternal deaths; Late maternal deaths; Neonatal preterm birth; Neonatal sepsis and other neonatal infections	Health center		
HC31	Focused use of vaccines for endemic infections, such as dengue, JEV, typhoid, meningococcus, and others	Typhoid and paratyphoid; Dengue; Yellow fever; Encephalitis	Health center	*	*
HC32	Provision of insecticide-treated nets to children and pregnant women attending health centers	Malaria, Dengue; Zika; Encephalitis; Yellow fever	Health center	*	
HC37	Low-dose inhaled corticosteroids and bronchodilators for asthma and for selected patients with COPD	Chronic obstructive pulmonary disease; Asthma	Health center	*	
HC49	Management of bipolar disorder using generic mood-stabilizing medications and psychosocial treatment	Bipolar disorder	Health center		*

HC54	Exercise programs for upper extremity injuries and disorders	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence; Other musculoskeletal disorders	Health center		*
HC62	Suturing laceration	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence	Health center		
HC63	Treatment of caries	Caries of deciduous teeth; Caries of permanent teeth	Health center		*
P1	Mass media messages concerning sexual and reproductive health and mental health for adolescents	HIV/AIDS and sexually transmitted infections; Depressive disorders; Bipolar Disorders; Anxiety disorders; Eating Disorders; Attention-deficit/hyperactivity disorder; Conduct disorder; Substance use disorders	Population-based		
P13	Mass media messages concerning awareness on handwashing and health effects of household air pollution	Diarrheal diseases; Acute hepatitis A; Acute hepatitis E; Chronic respiratory diseases	Population-based		
P3	Mass media messages concerning use of tobacco and alcohol	Alcohol abuse; Tobacco abuse	Population-based	*	
P4	Mass media encouraging use of condoms, voluntary medical male circumcision, and STI testing	HIV/AIDS and sexually transmitted infections	Population-based	*	

P5	Systematic identification of individuals with TB symptoms among high-risk groups and linkage to care (“active case finding”)	Tuberculosis	Population-based	*	*
P6	Sustained vector management for Chagas disease, visceral leishmaniasis, dengue, and other nationally important causes of non-malarial fever	Chagas disease; Dengue; Visceral leishmaniasis; Typhoid and paratyphoid; Yellow fever; encephalitis	Population-based		
RH1	Full supportive care for preterm newborns	Neonatal disorders	Referral and specialty hospital		
RH10	Elective surgical repair of common orthopedic injuries (for example, meniscal and ligamentous tears) individuals with severe functional limitation	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence	Referral and specialty hospital		
RH11	Urgent, definitive surgical management of orthopedic injuries (for example, by open reduction and internal fixation)	Transport injuries; Unintentional injuries; Exposure to forces of nature; Other unintentional injuries; Exposure to mechanical forces; Foreign body; Self-harm and interpersonal violence	Referral and specialty hospital		
RH13	Repair of club foot	Congenital musculoskeletal and limb anomalies	Referral and specialty hospital		
RH18	Surgery for trachomatous trichiasis	Trachoma	Referral and specialty hospital		

RH2	Specialized TB services, including management of MDR- and XDR-TB treatment failure and surgery for TB	Tuberculosis	Referral and specialty hospital	*	*
RH4	Management of acute ventilatory failure due to acute exacerbations of asthma and COPD; in COPD use of bi-level positive airway pressure preferred	Chronic obstructive pulmonary disease; Asthma	Referral and specialty hospital		
RH6	Use of percutaneous coronary intervention for acute myocardial infarction where resources permit	Ischemic heart disease	Referral and specialty hospital		
RH7	Treatment of early stage breast cancer with appropriate multimodal approaches (including generic chemotherapy), with curative intent, for cases that are detected by clinical examination at health centers and first-level hospitals	Breast cancer	Referral and specialty hospital		