Fundamentals of Public Health

Course code PHPH6012 · 2 credit hours · 3 weeks · DOCFAN ACADEMY

Course book (lesson notes, key terms, takeaways and sources). Updated November 2026. The interactive version with activities and quizzes is on DOCFAN ACADEMY.

Learning objectives

1. Describe health and public health and related concepts.

2. Review the evolution, historical development and philosophical foundations of public health.

3. Identify the unique features and core functions of public health.

4. Conceptualise public policy implications of the various approaches of public health.

5. Discuss determinants of health and diseases.

6. Apply evidence-based practice and evidence-based public health (EBPH).

7. Analyse transitions in health and their impact on health-care delivery.

8. Prioritise important public health diseases.

9. Describe important emerging and re-emerging public health problems.

10. Discuss globalisation and dimensions of global change.

11. Synthesise the health implications of globalisation, urbanisation and development.

12. Identify the Sustainable Development Goals (SDGs) and evaluate the status of the SDGs in different contexts.

13. Describe principles and values of public health ethics.

14. Evaluate health equity and equality in health care.

15. Analyse universal health coverage in Ethiopia.

16. Conduct and apply community health assessment procedures.

Chapter 1. Development and Philosophy of Public Health (2 hours, week 1)

Public health did not appear all at once. Each generation acted on its best idea of what makes people sick, and each idea led to different action: quarantine, drainage, vaccination, laws, or social reform. In this chapter you follow that story, and you will see why the same questions (who is responsible for health, and how do we know what works?) are still alive today.

Objectives

- Trace the main stages in the history of public health, from the ancient world to the era of new public health.
- Explain how ideas about disease causation (miasma, contagion, germ theory, multifactorial models) changed public health action.
- State the philosophy and values that distinguish public health from clinical care.
- List major achievements of public health in the 20th century and the challenges of the 21st.

1. Ancient and medieval public health

People organised to protect health long before germs were known. Early cities in Mesopotamia and the Indus Valley built drains and bathing places. Roman engineers brought clean water through aqueducts and carried waste away in sewers. The Greek writings attributed to Hippocrates (about 400 BCE), such as *Airs, Waters, Places*, linked disease to climate, water, soil and the way people live. This is an early form of environmental and social thinking about health.

In the medieval period, epidemics of leprosy and plague led to the first systematic disease control. During the Black Death (1347 to 1351) port cities such as Venice and Dubrovnik (Ragusa) held arriving ships offshore. The period was first 30 days and later 40 days, the origin of the word **quarantine** (from *quaranta giorni*, forty days). Cities also appointed health boards, burned or buried the dead outside the walls, and registered deaths. Hospitals and medical schools in the Islamic world, and the writings of Ibn Sina (Avicenna), carried medical knowledge forward in the same centuries.

2. Renaissance, Enlightenment and the birth of numbers

- **Fracastoro (1546)** proposed that diseases spread by invisible “seeds” of contagion.
- **John Graunt (1662)** analysed London’s Bills of Mortality and showed that births, deaths and causes follow patterns. This is the start of vital statistics.
- **Bernardino Ramazzini (1700)** described diseases of workers and taught doctors to ask “What is your occupation?”
- **James Lind (1747)** ran a comparison of treatments for scurvy among sailors, an early controlled trial.
- **Edward Jenner (1796)** showed that cowpox material protected against smallpox. The word *vaccine* comes from *vacca*, Latin for cow.

> **Key idea.** The Enlightenment gave public health two lasting tools: counting people (statistics) and testing ideas by comparison (experiment). Both are the foundation of modern epidemiology.

3. Social reform and the sanitary movement (19th century)

Industrial cities grew fast, and crowded housing, dirty water and poor food produced cholera, typhoid and tuberculosis. **Edwin Chadwick’s** 1842 report on the sanitary condition of the labouring population argued that poverty and filth caused disease and that government must supply clean water and sewers. Britain’s

Public Health Act (1848) created a central Board of Health. In the United States, **Lemuel Shattuck's** 1850 Massachusetts report recommended state and local health boards. In Germany, **Rudolf Virchow** studied a typhus epidemic in Silesia (1848) and concluded that social and political conditions were the root causes. He is often quoted: "Medicine is a social science, and politics is nothing but medicine on a grand scale."

John Snow and cholera. In 1854 a cholera outbreak struck the Soho district of London. Snow mapped the deaths and saw that they clustered around the water pump on Broad Street. He interviewed families, compared with people who used other water, and persuaded officials to remove the pump handle. The outbreak was already declining, but Snow's method (map cases, compare exposed and unexposed, act on the pattern) is a model for outbreak investigation today. He did this before the cholera bacterium was discovered.

4. Germ versus miasma: the bacteriological revolution

Until the late 1800s most doctors believed in **miasma**, the idea that "bad air" from rotting matter caused disease. Reformers such as Chadwick acted on this idea, and cleaning cities did reduce disease even though the theory was wrong. The **germ theory** then gave a precise explanation.

Scientist	Contribution	Public health meaning
Louis Pasteur	Showed that microbes cause fermentation and disease; pasteurisation; rabies vaccine (1885)	Food safety and vaccines made by design
Ferdinand Cohn	Classified bacteria and helped found bacteriology	Gave microbes names and groups that could be studied
Robert Koch	Identified the anthrax, tuberculosis (1882) and cholera bacteria; Koch's postulates	A method to link one microbe to one disease
Joseph Lister	Antiseptic surgery with carbolic acid (1867)	Infection control in hospitals
Ignaz Semmelweis	Hand washing cut childbed fever deaths (1847)	Hand hygiene, still a core infection control measure

Germ theory led to the discovery of the causes of many diseases within 30 years, then to antitoxins, vaccines, water filtration and chlorination, and later antibiotics.

5. Models of disease causation

Model	Main idea	Limit
Supernatural / miasma	Disease comes from spirits, punishment or foul air	Gives no way to test causes; yet sanitation based on it still helped
Germ theory (single cause)	One agent causes one disease (Koch's postulates)	Cannot explain non-infectious disease, carriers, or why only some exposed people fall ill
Epidemiological triad	Agent, host and environment interact	Simple; weak for chronic disease
Web of causation	Many interacting factors, direct and indirect, lead to disease	Hard to show which strand to cut first

Sufficient-component cause (Rothman's causal pies)	A disease occurs when a full set of component causes is present; no single cause is enough	Useful for thinking; hard to measure fully
Ecosocial / social determinants	Disease arises from biology embedded in social and economic conditions across the life course	Needs action outside the health sector

In 1965 Austin Bradford Hill listed considerations that help judge whether an association is causal: strength, consistency, specificity, temporality (cause before effect), biological gradient, plausibility, coherence, experiment and analogy. Temporality is the only one that is essential.

6. The philosophy of public health

The World Health Organization's Constitution (1948) describes health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". C.-E. A. Winslow (1920) described public health as the science and art of preventing disease, prolonging life and promoting health through the organised efforts of society. The United States Institute of Medicine (1988) said public health is what we, as a society, do collectively to assure the conditions in which people can be healthy.

From these definitions come the core beliefs of the field:

- **Population focus.** The unit of concern is a group of people, not only the individual patient. Geoffrey Rose (1985) showed that small shifts across the whole population can prevent more cases than treating only the high-risk few.
- **Prevention first.** Stopping illness is better and often cheaper than treating it.
- **Social justice and equity.** Health differences that are avoidable and unfair are a matter of justice, and health is a human right.
- **Collective responsibility.** Some health protection can only be provided together (clean water, vaccination coverage, clean air), so government and communities have duties.
- **Evidence and accountability.** Actions should be based on data and judged by results.

7. Milestones and achievements

Year	Milestone
1796	Jenner's smallpox vaccination
1842 to 1854	Chadwick's report; Snow's cholera investigation
1882 to 1884	Koch identifies the tubercle and cholera bacilli
1948	WHO founded; WHO Constitution defines health
1974	Lalonde report names lifestyle, environment, biology and health services as the four fields of health
1978	Declaration of Alma-Ata on primary health care
1980	Smallpox declared eradicated (the first human disease eradicated)
1986	Ottawa Charter for Health Promotion
2000 to 2015	Millennium Development Goals; child deaths fall sharply

2015	Sustainable Development Goals adopted (SDG 3: health)
2025	WHO Pandemic Agreement adopted (May); amended International Health Regulations enter into force (September)

The US Centers for Disease Control and Prevention listed **ten great public health achievements of the 20th century** (1999): vaccination; motor-vehicle safety; safer workplaces; control of infectious diseases; decline in deaths from coronary heart disease and stroke; safer and healthier foods; healthier mothers and babies; family planning; fluoridation of drinking water; and recognition of tobacco use as a health hazard. Globally, life expectancy rose by more than 20 years in the century, smallpox was eradicated, and oral rehydration therapy saved millions of children. Ethiopia was among the last countries with endemic smallpox, with its final cases in 1976.

8. The era of new public health

From the 1970s the field widened. The Lalonde report (1974), the Alma-Ata Declaration (1978) and the Ottawa Charter (1986) moved attention from germs and hospitals to **health promotion**, **primary health care**, healthy public policy, community action and the social determinants of health. “New public health” combines the old agenda (infection and sanitation) with the new (chronic disease, mental health, injuries, environment, equity).

> **Evidence update (2025 to 2026).** COVID-19 caused an estimated 22.1 million excess deaths worldwide in 2020 to 2023, about three times the 7 million reported COVID-19 deaths, showing how weak data systems hide the true toll [WHO 2026 summary]. WHO’s 2026 statistics report finds that none of the 52 health-related SDG indicators is on track for 2030 at global level, and links the slowdown partly to a fall of about 30 to 40 percent in development assistance for health in 2025 compared with 2023 [Health Policy Watch 2026]. The new public health era now includes global health security (amended International Health Regulations in force since 19 September 2025 [WHO IHR 2025]), climate change, and the question of who finances health when aid shrinks.
>
> **Ethiopia.** Ethiopia’s modern public health grew through disease campaigns (malaria, smallpox), the 1993 Health Policy, and the Health Extension Programme from 2003/04, which placed salaried health workers in villages. Chapter 9 follows this story in detail.

Key terms

Quarantine: Separation of people or goods that may carry infection for a fixed period; from the Italian for forty days.

Miasma theory: The old belief that disease comes from foul air produced by decaying matter.

Germ theory: The theory that specific microorganisms cause specific diseases.

Koch’s postulates: Criteria to link a microbe to a disease: found in all cases, grown in pure culture, causes disease when given to a healthy host, and recovered again.

Sanitary movement: 19th-century reform that used clean water, sewers and housing laws to reduce disease.

Vital statistics: Systematic counts of births, deaths, marriages and causes of death.

Population approach: Action aimed at shifting the health of a whole group, not only treating individuals.

Prevention paradox: A measure that brings large benefit to the population may offer little to each individual (Rose).

New public health: Modern view that adds health promotion, social determinants, equity and chronic disease to infection control.

Eradication: Permanent reduction to zero of worldwide incidence of an infection, so that no more intervention is needed (smallpox is the one human disease eradicated).

Group task

Group task (30 minutes). In groups of four, make a one-page poster timeline titled “From Hippocrates to the Pandemic Agreement”. Choose one pivotal event per era (ancient, medieval, Enlightenment, sanitary, bacteriological, 20th century, new public health, today). For each, write one sentence on what people believed caused disease and one on what they did. Present in two minutes. Marking guide: accuracy, clear link between belief and action, use of at least one Ethiopian example.

Key takeaways

- Public health action always followed the dominant idea of causation, but sanitation and vaccination worked even before mechanisms were known.
- Counting people and comparing groups (Graunt, Snow) is the root of epidemiology.
- Public health rests on population focus, prevention, equity and collective responsibility.
- The new public health adds health promotion, social determinants and global health security; funding shocks in the 2020s show the system remains fragile.

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Chapter 2. Basic Concepts and Features of Public Health (4 hours, week 1)

Before you can practise public health you need the vocabulary and the mental map: who is the 'public', what counts as 'health', what do public health agencies actually do, and what values guide them? This chapter also asks you to reason about ethical dilemmas, because every public health action limits someone's freedom or spends someone's money.

Objectives

- Define population, community, public and health, and give common definitions of public health.
- Describe the unique features, disciplines and competencies of public health.
- Explain the core functions of public health and the essential public health services/functions.
- Describe the Alma-Ata and Astana declarations on primary health care.
- Apply the principles and values of public health ethics, and describe the role of intercultural competence.

1. Key concepts

- **Population:** all people who live in a defined area or share a defined characteristic (for example all children under five in Ethiopia). Populations are what we count and compare.
- **Community:** a group of people who share a place, interests, identity or institutions and who interact (a kebele, a school, a congregation, an online group). A population becomes a community when people feel a link and can act together.
- **Public:** the people as a whole, including the people who are not patients and who may not know they are at risk. 'Public' also means shared: public goods such as clean air and herd immunity benefit everyone and cannot be fully bought by individuals.
- **Health:** the WHO Constitution (1948) defines it as complete physical, mental and social well-being and not merely absence of disease. Critics say 'complete' is unrealistic, so many now stress the *ability to adapt and self-manage* and the idea of well-being across the life course. The Ottawa Charter (1986) calls health a resource for everyday life, not the object of living.
- **Wellness:** an active process of making choices toward a healthy and fulfilling life; it is wider than the absence of illness and includes physical, emotional, social, spiritual and environmental dimensions.

2. What is public health?

Definitions differ in wording but share three ideas: **prevention**, **population** and **organised collective effort**. Winslow's (1920) definition is the best known: public health is the science and art of preventing disease, prolonging life and promoting health through the organised efforts of society. The Institute of Medicine (1988) added that public health is what we do together to assure the conditions in which people can be healthy.

Related terms are used in different settings, with overlap: **community health** (health of a defined community, often delivered locally), **preventive medicine** (the clinical specialty), **social medicine**, **population health** (outcomes of a group and their distribution), **health promotion**, **international or global health** (health across borders, see Chapter 6) and **primary health care** (a whole-of-society approach, see below).

3. Unique features of public health

- The **population** is the patient; the community is the unit of diagnosis and treatment.

- Emphasis on **prevention** at all levels (primordial, primary, secondary, tertiary).
- **Equity**: attention to who is left behind, and to the causes of unfair differences.
- **Multisectoral**: health is affected by water, education, roads, agriculture and trade, so health workers need to work with other sectors.
- **Government and community** carry the main responsibility, with law, policy and financing as tools.
- **Evidence-driven**: surveillance, epidemiology and evaluation guide decisions.
- **Benefits are often invisible**: a successful prevention programme shows as 'nothing happened', so public health is easy to underfund.

4. Core functions, essential services and essential functions

The Institute of Medicine (1988) named three **core functions** of public health: **assessment** (monitor and diagnose the health of the community), **policy development** (plan and make evidence-informed policy) and **assurance** (make sure that services are available, the workforce is competent and people can access them).

These were expanded to the **10 Essential Public Health Services**, revised in 2020 with equity placed at the centre: (1) assess and monitor population health; (2) investigate, diagnose and address health hazards; (3) communicate effectively to inform and educate; (4) strengthen, support and mobilise communities and partnerships; (5) create, champion and implement policies, plans and laws; (6) use legal and regulatory actions; (7) enable equitable access to care and services; (8) build and support a diverse, skilled workforce; (9) improve and innovate through evaluation, research and quality improvement; (10) build and maintain strong organisational infrastructure.

WHO has its own list of **Essential Public Health Functions (EPHFs)**. After COVID-19, WHO and partners renewed the list to a set of 12 functions that cover surveillance and monitoring, emergency preparedness and response, health protection, disease prevention and early detection, health promotion, governance and financing, workforce, and community engagement [EPHF 2023] [WHO EPHF paper]. The aim is that every country can check how strong each function is and invest where it is weak.

5. Disciplines and competencies

Discipline	What it contributes
Epidemiology and biostatistics	Describe patterns and causes of disease, test hypotheses and measure impact
Environmental and occupational health	Water, sanitation, air, chemicals, food safety, workplaces, climate
Health policy, management and economics	Plan, finance, organise and regulate health systems
Social and behavioural sciences, health promotion	Understand behaviour, culture and social determinants; design education and community action
Nutrition, maternal and child health, reproductive health	Population groups and life-course priorities
Health informatics and data science	Information systems, digital health, analytics
Global health	Cross-border threats, development, humanitarian settings

Core competencies for public health practitioners are usually grouped into: analytical and assessment skills; policy development and programme planning; communication; cultural competency; community dimensions of practice; public health sciences; financial planning and management; and leadership and systems thinking. Competency is the ability to apply knowledge, skills and attitudes to real tasks, and it is assessed by what you can do, not only by what you know.

6. Primary health care: Alma-Ata (1978) and Astana (2018)

The **Declaration of Alma-Ata** (1978) said that health is a human right, that gross inequality in health is unacceptable, and that governments are responsible for the health of their people. It proposed *Health for All* through primary health care (PHC) based on equity, community participation, intersectoral action, appropriate technology and a focus on prevention. It listed essential elements: health education; promotion of food supply and nutrition; safe water and sanitation; maternal and child health including family planning; immunisation; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and essential drugs.

In 2018 the **Declaration of Astana** renewed the commitment and linked PHC to universal health coverage and the SDGs. It has three components: (1) primary care and essential public health functions as the core of integrated services; (2) multisectoral policy and action; (3) empowered people and communities. The 2020 WHO-UNICEF operational framework turns this into 14 levers for countries, and the 2023 UN high-level meeting on UHC again placed PHC at its centre.

> **Ethiopia.** The Health Extension Programme (HEP), launched in 2003/04, is Ethiopia's main PHC delivery platform. Its revised 2020 to 2035 roadmap creates a new cadre of village health leaders, reclassifies health posts into three types and updates the service packages [MoH HSDIP].
>
> **Evidence update.** A WHO survey of 108 low- and lower-middle-income countries found that 63 percent had seen job losses or pay cuts for health workers by 2026, after the sharp fall in aid [Health Policy Watch 2026]. Protecting the PHC workforce is therefore a first-order public health priority.

7. Ethics and values in public health

Public health actions often restrict choice (quarantine, mandatory notification, tobacco taxes) to protect others, so ethical reasoning is part of the job. The usual starting principles are:

- **Respect for autonomy**: people decide about their own lives, with accurate information and without coercion, unless others are harmed.
- **Beneficence and non-maleficence**: do good and avoid harm, including the harms of public health measures.
- **Justice and equity**: fair distribution of benefits and burdens; special attention to the disadvantaged.
- **Solidarity and reciprocity**: we share risks; those who bear burdens for the public (for example health workers) deserve support.
- **Proportionality, necessity and least restrictive means**: the benefit must justify the restriction, the measure must really be needed, and the least intrusive effective option should be used.
- **Transparency, participation and accountability**: explain decisions, involve communities, and report results.
- **Privacy and confidentiality**: collect only the data you need, protect it, and use it for stated purposes.

The **Nuffield intervention ladder** helps judge how intrusive a measure is, from least to most: do nothing or monitor; provide information; enable choice; guide choice through changing the default; guide choice through incentives; guide choice through disincentives; restrict choice; eliminate choice. The higher you climb, the stronger the justification needed.

8. Intercultural competence and ways of knowing

Public health works across languages, faiths and traditions. **Cultural humility** means listening, asking about the person's own explanation of illness, and not assuming that your way is the only way. In Ethiopia more than 80 languages are spoken and many communities use traditional healers and holy water; ignoring these beliefs can reduce trust and uptake, and working with respected local people can increase it.

Public health also recognises several **ways of knowing**: empirical (measurement and experiments), authoritative (guidelines and experts), traditional (inherited community knowledge), and experiential (lived experience of patients and practitioners). Good practice values scientific evidence, and also listens to community knowledge; the two are brought together in community-based participatory methods.

Key terms

Population: All people in a defined area or with a defined characteristic.

Community: People who share place, interests or identity and can act together.

Public good: A benefit that cannot be easily restricted to individuals, such as clean air or herd immunity.

Core functions (IOM): Assessment, policy development and assurance.

Essential public health services/functions: Standard lists of activities a health system must perform to protect the public (CDC 10 services; WHO EPHFs).

Primary health care: A whole-of-society approach to health that includes primary care, essential public health functions, multisectoral action and community empowerment.

Astana Declaration: 2018 renewal of Alma-Ata linking PHC with UHC and the SDGs.

Proportionality: The harm or restriction must be justified by the size of the benefit.

Least restrictive means: Choose the intervention that limits freedom the least while still being effective.

Cultural humility: A lifelong stance of learning from, and respecting, the beliefs and practices of others.

Group task

Seminar (45 minutes). Debate: "Governments should make childhood vaccination compulsory." Split into groups: for, against, and ethics panel. Use the Nuffield ladder and the principles in this chapter. The panel scores each side on use of evidence, proportionality, respect for culture and proposals for support. End with a class statement on which measures on the ladder are acceptable.

Key takeaways

- Public health is organised collective action to prevent disease and promote health in populations.

- Core functions: assessment, policy development, assurance. Essential services/functions give a checklist for the whole system.
- PHC (Alma-Ata, Astana) is the main route to equity and UHC.
- Ethics is part of practice: balance liberty, benefit and fairness using proportionality, least restrictive means and reciprocity.
- Cultural humility and local knowledge make programmes work.

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Chapter 3. Core Public Health Approaches (4 hours, week 1)

Programmes can be built around a disease or around a health system. Most real countries use both. You will meet the main approaches, see how they work for four major diseases, and learn where public health gets its data. The statistics in this chapter come from reports published between 2025 and 2026.

Objectives

- Compare vertical, horizontal and diagonal (integrated) approaches and explain when each is appropriate.
- Describe the One Health approach and apply it to a zoonotic threat.
- Summarise the burden and current control strategies for HIV/AIDS, tuberculosis, malaria and vaccine-preventable diseases.
- Identify sources of health information and judge their strengths and limits.

1. Vertical, horizontal and diagonal approaches

	Vertical (disease-specific)	Horizontal (health-system-wide)
Idea	Target one disease or condition with a dedicated programme	Strengthen the whole system so that all conditions are served through PHC
Examples	Smallpox eradication, polio eradication, malaria eradication campaign (1950s to 1960s), HIV treatment programmes	Health Extension Programme, PHC, integrated management of childhood illness, health financing reform
Strengths	Clear goal, quick results, strong accountability, good for diseases that can be eradicated or controlled with a single tool	Equitable, sustainable, person-centred, efficient for people with several conditions
Weaknesses	Parallel staff, data systems and supply chains; weak links to the rest of care; dependence on donor funding; can distort workforce priorities	Slower; harder to measure; may lack targeted attention to urgent priorities

The debate began in 1978. Alma-Ata argued for comprehensive PHC. Soon after, ‘selective PHC’ proposed a few cost-effective interventions (growth monitoring, oral rehydration, breastfeeding, immunisation, summarised as GOBI). Today most experts advise a **diagonal** or **integrated** approach: use priority diseases as an entry point to build general capacity. For example, HIV clinics can offer hypertension and diabetes care; the immunisation platform can also deliver vitamin A, deworming and nutrition screening; one community health worker can handle malaria, pneumonia and diarrhoea (integrated community case management).

> **Key idea.** Choose by the goal. If a disease can be eradicated and a single strong tool exists (polio, Guinea worm), a vertical campaign makes sense, but plan from the start how it will integrate. For long-term burden and equity, build the horizontal system and use priority diseases to strengthen it.

> **Evidence update.** The loss of donor funds in 2025 shows the risk of parallel, donor-dependent systems: official development assistance for health in 2025 was an estimated 30 to 40 percent below 2023 levels

[Health Policy Watch 2026]. Ethiopia's Ministry of Health has responded by integrating services, digitising operations and mobilising domestic resources [The Reporter 2026]. The global community's 2023 Lusaka Agenda calls on global health initiatives to align with national systems.

2. One Health

One Health is an integrated approach that aims to sustainably balance and optimise the health of people, animals and ecosystems (definition of the One Health High-Level Expert Panel, 2021). It is supported by four international organisations (the Quadripartite): FAO, UNEP, WHO and the World Organisation for Animal Health (WOAH), whose Joint Plan of Action runs 2022 to 2026.

About 60 percent of known infectious diseases, and about 75 percent of emerging infectious diseases, are zoonotic (they pass between animals and people). One Health is used for zoonoses (rabies, brucellosis, anthrax, avian influenza, Marburg and Ebola), food safety, antimicrobial resistance (AMR) and environmental threats. It requires physicians, veterinarians, ecologists, laboratory staff and communities to share surveillance data and plan together.

Ethiopia. Ethiopia has launched a National Action Plan for Health Security and a five-year One Health Strategic Plan [FAO One Health]. The Ethiopian Public Health Institute (EPHI), the Ministry of Agriculture, the Environment, Forest and Climate Change Commission and universities take part. Livestock keeping, close human-animal contact and shared water make One Health especially relevant.

3. Major disease control programmes: current evidence

HIV/AIDS. HIV infections are prevented by condoms, voluntary male circumcision, prevention of mother-to-child transmission (PMTCT), harm reduction, pre-exposure prophylaxis (PrEP, including long-acting injectables) and treatment as prevention. The UNAIDS targets are 95-95-95 (95 percent of people living with HIV know their status, 95 percent of those are on treatment, 95 percent of those are virally suppressed). New HIV infections fell by 40 percent between 2010 and 2024, to 1.3 million, but this is still far from the 2030 target [Health Policy Watch 2026]. In Ethiopia, national prevalence is about 0.8 percent, down from about 2 percent two decades ago; new infections among youth remain high. The Ministry is moving to a 'triple elimination' framework to end mother-to-child transmission of HIV, syphilis and hepatitis B in routine antenatal care, with a hepatitis B birth-dose coverage target of 90 percent by 2030. In a February 2026 interview, figures of about 4 percent domestic funding for the HIV response and a roughly 40 percent fall in external health aid were put to the Ministry's HIV lead, who did not dispute them [The Reporter 2026].

Tuberculosis (TB). In 2024 about 10.7 million people fell ill with TB and about 1.2 million died. Compared with 2015, incidence is down 12 percent and deaths are down 29 percent, well short of the End TB 2025 milestones (50 percent and 75 percent). Thirty countries account for 87 percent of cases; Ethiopia is among the high-burden countries for TB and TB/HIV. In 2024, US$5.9 billion was available for TB services, just over a quarter of the US$22 billion annual target [WHO TB 2025] [CIDRAP 2025]. Core strategies: find and treat cases early (rapid molecular tests, WHO-recommended shorter regimens), preventive treatment for contacts and people living with HIV, vaccination of infants with BCG, tackling undernutrition, smoking and diabetes, and social protection.

Malaria. In 2024 there were an estimated 282 million cases (up 9 million from 2023) and 610,000 deaths, about 95 percent of them in the WHO African Region. Ethiopia contributed about 2.9 million of the

additional cases. Artemisinin partial resistance is confirmed in four African countries; the mosquito *Anopheles stephensi*, which breeds in urban water containers, has been detected in nine African countries; 17 countries had introduced malaria vaccines by December 2024. Funding was US$3.9 billion against a US$9.3 billion target [WHO malaria 2025]. Tools: insecticide-treated nets, indoor residual spraying, rapid diagnostic tests and artemisinin combination therapy, seasonal malaria chemoprevention, vaccines (RTS,S and R21), larval source management.

Immunisation. Immunisation prevents an estimated 3 to 5 million deaths each year. Data for 2025 show that 85 percent of infants received three doses of DTP (DTP3) and 90 percent received at least one dose (DTP1). First- and second-dose measles coverage was 84 and 77 percent, below the 95 percent required to prevent outbreaks. About 13.5 million children were 'zero-dose' (no vaccine in the first year), and 57 countries reported large or disruptive measles outbreaks [WUENIC 2025]. Ethiopia has been running catch-up campaigns for zero-dose children and a measles campaign in 2026 that reached 391,832 children against a target of 682,917 in the first half of the year [UNICEF SitRep 2026]. The Immunisation Agenda 2030 sets the goals.

4. Sources and uses of health information

Source	What it gives	Strength	Limit
Census	Population size, age, sex, distribution	Complete count	Every 10 years; little health detail
Civil registration and vital statistics (CRVS)	Births, deaths, cause of death	Continuous; the ideal source	Incomplete in many low-income countries
Household surveys (DHS, MICS, national nutrition and NCD surveys)	Fertility, child and maternal health, nutrition, coverage	Representative; comparable across countries	Every 3 to 5 years; sample error; recall bias
Routine health information system (HMIS/DHIS2)	Facility service data (immunisation, antenatal care, notifications)	Continuous and local	Quality varies; excludes people who do not attend
Disease surveillance and IDSR	Alerts and counts for priority diseases	Early warning	Under-reporting; depends on lab capacity
Facility and health system assessments	Readiness, availability of medicines	Shows service quality	Costly; periodic
Research and programme records	In-depth evidence on causes and effects	Answers specific questions	Not always generalisable

Evidence update. Data gaps are a global problem. Of about 61 million deaths in 2023 only about 21 million were reported with any cause of death information and only about 12 million with meaningful cause coding; only 18 percent of countries reported mortality data within a year [WHO 2026 summary] [Health Policy Watch 2026]. Strengthening CRVS and routine information systems (including the Ethiopian digital health blueprint and electronic medical records, introduced in 130 health institutions in 2025) is therefore a core public health task.

Key terms

Vertical programme: A programme with its own staff, funds and structure aimed at one disease or intervention.

Horizontal approach: Strengthening general health services so that many conditions are managed.

Diagonal approach: Using priority-disease funding to strengthen the whole health system.

One Health: Integrated approach that balances and optimises the health of people, animals and ecosystems.

Zoonosis: Infection that passes between animals and humans.

95-95-95: UNAIDS targets for HIV testing, treatment and viral suppression.

Zero-dose child: A child who has not received any routine vaccine.

DTP3 coverage: Share of infants who receive three doses of diphtheria-tetanus-pertussis vaccine; a standard marker of immunisation system strength.

HMIS: Routine system for reporting health service data from facilities to higher levels.

CRVS: Civil registration and vital statistics: legal recording of births and deaths and their causes.

Group task

Group task (40 minutes). Each group takes one of HIV, TB, malaria or immunisation. Using the figures in this chapter plus one Ethiopian source, prepare a 3-slide brief: (1) current burden, (2) control strategy (what is vertical, what is integrated), (3) three risks created by the 2025 funding cuts and one mitigation. Present in 3 minutes; classmates ask one question each.

Key takeaways

- No single approach fits all: use vertical tools for focused goals but build integrated, PHC-based systems.
- One Health is essential for zoonoses, food safety and AMR.
- HIV, TB, malaria and immunisation have strong tools, but the 2025 funding cuts threaten progress.
- Know your data sources and their limits.

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Chapter 4. Health and Disease Determinants (4 hours, week 2)

Why does a child in one kebele grow strong while a child in the next stays stunted? Doctors treat the illness; public health asks what made it likely. In this chapter you learn to look 'upstream' at the conditions that shape health, and to separate underlying causes from the final events.

Objectives

- Define a determinant of health and distinguish determinants from risk factors and from direct and indirect contributing factors.
- Describe biological, socioeconomic, environmental, behavioural, health service and organisational determinants with examples.
- Use a framework (Lalonde, Dahlgren-Whitehead, WHO commission) to analyse the causes of a health problem.
- Explain the social gradient and the difference between equality and equity in health.

1. What is a determinant of health?

A **determinant of health** is any factor that influences the health of individuals or populations, positively or negatively. Determinants act at several levels and over the whole life course. Some are fixed (genes), some can be changed by a person (smoking), and many are outside individual control (income, clean water, laws).

The determinants of health and the determinants of *disease* are not the same thing. Smoking is a determinant of lung cancer; poverty and tobacco advertising are determinants of smoking. Public health looks for the 'causes of the causes' [GBD 2023].

2. Categories of determinants

Category	Examples	How public health acts
Biological / heredity	Age, sex, genetic risk (sickle cell disease, familial hypercholesterolaemia), ageing	Screening, genetic counselling, tailored care; cannot be 'changed', but impact can be reduced
Socioeconomic (social and economic)	Income, education, employment, housing, social support, gender, discrimination, conflict	Social protection, education, income policy, equity-focused programmes
Environmental (physical)	Water and sanitation, air quality (including indoor smoke from biomass fuel), food safety, climate, built environment, occupational hazards	Standards, regulation, infrastructure, climate adaptation
Behavioural (lifestyle)	Tobacco, alcohol, diet, physical activity, sexual behaviour, hygiene, health-seeking	Health education, taxes, laws, supportive environments
Health service	Access, quality and affordability of care; vaccination coverage; availability of medicines and skilled staff	Health system strengthening, UHC, quality improvement
Organisational / structural	How institutions are governed and managed: school and	Policy and governance reform, accountability, regulation of

	workplace policies, health policy and financing, governance, corruption, trade and commercial practices, health system management	harmful industries

3. Frameworks: seeing the layers

Lalonde (1974) divided health into four fields: human biology, environment, lifestyle and health care organisation. **Dahlgren and Whitehead (1991)** arranged determinants in layers, from the individual at the centre to broad social conditions at the edge. The **WHO Commission on Social Determinants of Health (2008)** separated *structural determinants* (income, education, gender, race, governance, which create a social position) from *intermediary determinants* (living conditions, behaviours, health system) and called for closing the gap in a generation.

[Figure: see the interactive course]

Two ideas matter in the figure. First, factors in the outer layers change the options available in the inner layers: a poor family may want to cook with clean fuel but cannot afford it. Second, action at the outer layers (policy, economy) can reach everyone, whereas education at the centre reaches only those who can use it.

4. The social gradient

In almost every society, health improves with each step up the social ladder. This is the **social gradient**; it affects everyone and not just the poorest. Studies of British civil servants (Whitehall, led by Michael Marmot) showed that even among people with stable jobs, those in lower grades had much higher mortality. Gradients are found in Ethiopia too: children in the poorest households are more likely to be stunted and less likely to be fully vaccinated than those in the richest.

5. Determinants, risk factors and contributing factors

Concept	Definition	Example (child undernutrition)
Determinant	A factor at any level that shapes the probability of health or disease; often distal (upstream)	Household poverty, low maternal education, gender inequality, food prices, armed conflict
Risk factor	A specific attribute or exposure that raises the probability of a disease	Low birth weight, no exclusive breastfeeding, diarrhoea, poor complementary feeding
Direct (proximate) cause	The factor that acts immediately on the body	Inadequate food intake and repeated infection
Indirect (underlying) contributing factor	Factors that act through the direct causes	Household food insecurity, poor water and sanitation, inadequate care and health services
Basic (root) cause	Social, economic and political structures	Poverty, governance, markets, climate, conflict

This is the logic of the UNICEF framework for child undernutrition: **immediate** causes (diet, disease), **underlying** causes (food, care, health services and environment) and **basic** causes (resources, institutions,

politics). The Mosley-Chen model of child survival makes the same point: social and economic factors act on child health through intermediate variables such as breastfeeding, sanitation and infection control.

> **Key idea.** Do not mistake a risk factor for the cause. Treating the risk factor (giving a supplement) may help a single child. Changing the determinant (water, education, income) changes the risk for the whole community.

6. Newer ideas

- **Commercial determinants of health:** the ways in which private industry shapes health, for example through marketing of tobacco, alcohol, breast-milk substitutes and ultra-processed foods. In 2025, the World Health Assembly extended the Code on breast-milk substitutes to cover digital marketing [WHA78 2025].
- **Climate and environment:** air pollution, heat and extreme weather. The 2025 Assembly set a target to halve the health impact of air pollution by 2040, and WHO reported that nearly 60 percent of new emergencies in the previous year were climate-related [WHA78 2025]. The GBD 2023 study found that deaths from environmental heat and cold rose by about 6 percent a year from 2013 to 2023 [GBD 2023].
- **Digital determinants:** access to phones, data and information, which can improve or worsen inequality in access to health information and services.
- **Conflict and displacement:** war destroys facilities, interrupts vaccination and drives malnutrition. In Ethiopia, drought, conflict and displacement together fuel outbreaks and malnutrition [UNICEF SitRep 2026].

7. Equality and equity

Equality means giving everyone the same resource. **Equity** means giving each group what it needs to reach the same opportunity for health, which usually means more for those who have less. Health **inequalities** are measurable differences between groups; **inequities** are those that are avoidable and unfair. The Sustainable Development Goals' promise to 'leave no one behind' requires that data be broken down by income, sex, residence, age and disability.

> **Evidence update.** The 2025 UHC global monitoring report shows that about 3 in 4 people in the poorest group faced financial hardship from health costs in 2022, compared with fewer than 1 in 25 in the richest group [UHC report 2025]. Safely managed drinking water reached about 1 billion more people since 2015 [WHO 2026], and tobacco use fell 27 percent since 2010, close to the 30 percent target [Health Policy Watch 2026].

> **Ethiopia.** Child stunting was 39 percent in 2022 (37 percent in 2019) [UNICEF budget brief]. Water, sanitation, maternal education, food security, conflict, drought and health service coverage interact. Out-of-pocket spending was 30.5 percent of total health expenditure, against the 20 percent threshold WHO suggests [UNICEF budget brief] [MoH HSDIP].

Key terms

Determinant of health: A factor that influences the health of individuals or populations.

Risk factor: An attribute or exposure that increases the probability of a disease.

Social gradient: The stepwise relationship between social position and health across the whole population.

Structural determinants: Social, economic and political arrangements that create social position (income, education, governance, gender).

Intermediary determinants: Living and working conditions, behaviours and health services that translate social position into health.

Commercial determinants: Private-sector activities that affect health (marketing, pricing, lobbying).

Upstream intervention: Action on root causes (policy, income, environment) rather than on downstream illness.

Health inequity: A health difference that is avoidable, unfair and unjust.

Life-course approach: Looking at how exposures at different ages accumulate to shape health.

Equity vs equality: Equality is the same for all; equity is what each needs to achieve the same opportunity.

Group task

Group task (40 minutes). Pick a local health problem. Build a causal diagram on a flip chart with three levels (immediate, underlying, basic). Mark which causes are in the health sector and which require other sectors. Choose three interventions, one for each level, and name the partner for each. Present in 3 minutes.

Key takeaways

- Determinants shape who becomes ill; look beyond the immediate cause.
- Use a framework to separate immediate, underlying and basic causes.
- Health follows a gradient: the whole population is affected, not only the poor.
- Equity-focused action and multisectoral policy are the most powerful tools.

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Chapter 5. Transitions in Health and Development (3 hours, week 2)

Societies change in predictable ways: people live longer, have fewer children, move to cities and eat differently. Each change shifts the diseases we see and the services we need. Ethiopia is in the middle of several transitions at once, which is why its health system must fight old and new problems together.

Objectives

- Describe the epidemiological, demographic, nutrition and health transitions and the stages of each.
- Explain how urbanisation and development affect health.
- Analyse the impact of these transitions on health-care delivery and policy in Ethiopia and other low-income countries.

1. Epidemiological transition

Abdel Omran (1971) described the shift in the pattern of disease and death that comes with modernisation. He named three ages:

- **Age of pestilence and famine:** life expectancy 20 to 40 years; infections, malnutrition and childbirth deaths dominate; mortality high and fluctuating.
- **Age of receding pandemics:** improved nutrition, sanitation and medicine; epidemics become less frequent; life expectancy about 30 to 50 years and rising.
- **Age of degenerative and man-made diseases:** heart disease, cancer, diabetes, injuries; life expectancy above 50 years.

Later authors added further stages: an age of **delayed degenerative diseases** (cardiovascular deaths postponed to older ages) and an age of **re-emerging infections, obesity and inactivity**. Countries follow different **pathways**: the classical (Western) model; the accelerated model (Japan); and the **protracted-polarised** or **delayed** model of low- and middle-income countries, where infections and chronic diseases exist at the same time and the poor suffer most. This is the **double burden of disease**.

> **Evidence update.** The Global Burden of Disease 2023 study (published October 2025) found that non-communicable diseases now cause nearly two-thirds of global deaths and ill health, led by ischaemic heart disease, stroke and diabetes. Global life expectancy recovered after COVID-19, to 76.3 years for females and 71.5 for males in 2023, and anxiety and depressive disorders increased by 63 percent and 26 percent [GBD 2023]. NCDs claim about 18 million lives prematurely (before 70) each year; the 2025 UN political declaration set 2030 targets of 150 million fewer tobacco users, 150 million more people with controlled hypertension and 150 million more people with access to mental health care [WHO NCD 2025].
>
> **Ethiopia** is in a protracted-polarised transition. Infectious diseases (malaria, TB, HIV, respiratory and diarrhoeal infections), undernutrition and maternal and newborn conditions remain major, while hypertension, diabetes, cancers, injuries and mental disorders rise, especially in cities. In 2024, Ethiopia contributed about 2.9 million of the extra malaria cases worldwide [WHO malaria 2025]; at the same time combined hepatitis B and C prevalence is reported at 9.4 percent [The Reporter 2026].

2. Demographic transition

The demographic transition describes the movement from high birth and death rates to low ones.

[Figure: see the interactive course]

Stage	Birth rate	Death rate	Population growth	Example
1 High stationary	High	High	Slow	Pre-industrial societies
2 Early expanding	High	Falling	Rapid	Many low-income countries, including Ethiopia in recent decades
3 Late expanding	Falling	Low	Still growing, slowing	Countries with expanding family planning
4 Low stationary	Low	Low	Stable or slow	Many high-income countries
5 Declining (some authors)	Very low	Rising slightly with ageing	Shrinking	Japan, parts of Europe

Key measures: crude birth rate (CBR), crude death rate (CDR), total fertility rate, life expectancy, the **dependency ratio** (people aged 0 to 14 and 65 and over per 100 people aged 15 to 64) and the age pyramid. A country with a high share of young people has a wide-based pyramid; when fertility falls, the working-age group becomes relatively large and a **demographic dividend** is possible, but only if there are jobs, education and good health. Ethiopia's total fertility rate fell from above 7 in 1990 to about 4 in 2019, and its population is young, with a very large number of adolescents who will need services and jobs.

3. Nutrition transition

Barry Popkin described changes in diet and activity as societies develop: from hunter-gatherer diets, through famine, to a stage of **receding famine** and then to diets high in fat, sugar and processed foods with low physical activity and rising obesity and chronic disease, and finally a stage of behaviour change. Low- and middle-income countries now show a **double burden of malnutrition**: stunting, wasting and micronutrient deficiency alongside overweight and obesity, even in the same household. Ultra-processed foods, sugar-sweetened drinks, urban living and less walking drive the change.

> **Ethiopia.** Stunting affects about 39 percent of children under five (2022) [UNICEF budget brief]. In the first half of 2026, 328,422 children under five were treated for severe acute malnutrition, mostly in Oromia and Amhara, with a 93 percent cure rate, but only 43 percent of the target [UNICEF SitRep 2026]. At the same time overweight and hypertension are increasing in urban adults. 'Double-duty' actions address both: breastfeeding promotion, school nutrition, food labelling, taxation of sugary drinks and marketing controls.

4. Urbanisation

More than half of the world's people now live in cities, and Africa is urbanising faster than any other region. Cities offer jobs, schools and clinics (the 'urban advantage'), but rapid growth creates slums with crowded housing, poor water and sanitation, air pollution, injuries, violence, stress, and unhealthy food environments. The poor in cities may have worse health than rural neighbours because they live in informal settlements, pay for water and cannot use services.

- **Communicable diseases:** TB, cholera, measles, dengue and urban malaria (*Anopheles stephensi*) spread more easily in crowded areas.
- **Non-communicable diseases:** less physical activity, processed food, tobacco, alcohol.
- **Injuries:** road crashes, burns, fires, occupational injuries.
- **Mental health:** stress, isolation, unemployment.

Addis Ababa's HIV prevalence (about 1.2 percent) is higher than the national average (about 0.8 percent) [The Reporter 2026]. Healthy city policies, safe water, sanitation, urban planning for walking and cycling, and strong primary care in informal settlements are key public health tools.

5. The health transition

The **health transition** (Frenk and colleagues, 1991) combines two parts: the **epidemiological transition** (changes in disease patterns) and the **health-care transition** (the way society organises its response: from hospital-based acute care toward long-term, prevention-oriented and community-based care). It also includes changes in knowledge, technology, financing and demand.

Change	What the health system must do
More chronic disease	Long-term care at primary level; regular supply of medicines; screening and risk-based management (for example WHO PEN and HEARTS packages); patient self-management and peer support
Older population	Geriatric care, rehabilitation, palliative care, social protection
Young population	Adolescent-friendly services, sexual and reproductive health, mental health, education and jobs
Urban growth	Primary care for informal settlements; environmental health; emergency and trauma care
Persisting infections and undernutrition	Keep immunisation, malaria, TB, HIV and nutrition programmes strong
Rising costs	Financial protection, essential benefit packages, efficiency, domestic resource mobilisation

> **Key idea.** Transition is not a straight line. A country can slip back (for example when conflict, drought or aid cuts disrupt services). The right response is to protect gains in infectious disease and nutrition while building capacity for NCDs, not to switch from one to the other.

Key terms

Epidemiological transition: Shift from infectious and nutritional causes of death to chronic and degenerative diseases as societies develop.

Double burden of disease: Existence of high rates of infectious diseases and of non-communicable diseases at the same time.

Demographic transition: Change from high to low birth and death rates.

Dependency ratio: People aged 0 to 14 and 65+ per 100 people aged 15 to 64.

Demographic dividend: Economic growth potential when the working-age share is high compared with dependants.

Nutrition transition: Shift in diet and activity toward energy-dense, processed foods and lower physical activity.

Double burden of malnutrition: Undernutrition and overweight/obesity at the same time in a population or household.

Urbanisation: Increasing share of a population living in cities.

Health transition: Epidemiological transition plus the transition in how health care is organised.

Premature NCD death: Death from NCD before age 70.

Group task

Group task (45 minutes). Each group receives a country profile (Ethiopia, Kenya, Bangladesh, Brazil). Using UN and WHO sources, place the country on the demographic and epidemiological transitions and list three health system priorities for the next decade. Present one slide with a transition 'map' and compare answers across groups.

Key takeaways

- Epidemiological, demographic and nutrition transitions happen together and unevenly.
- Ethiopia has a double burden of disease and malnutrition.
- Urbanisation brings opportunity and new risks.
- The health system must keep old gains while adding integrated NCD, mental health and elder care in primary health care.

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Chapter 6. Global Health (4 hours, week 2)

Disease, trade, money, ideas and people cross borders every day. A virus in one forest can reach a capital city in a day; a marketing campaign in one country can change diets in another; a funding decision in a donor capital can close a clinic in a village. This chapter introduces global health as the study of these connections, with the latest numbers.

Objectives

- Describe the spatial, temporal and cognitive dimensions of global change and the forces that drive globalisation.
- Explain how globalisation affects health and health systems, with benefits and harms.
- Interpret the global burden of disease and describe the current global health priorities.
- Identify major global health actors, agreements and initiatives, including recent changes to global health security.

1. Globalisation and the three dimensions of change

Globalisation is the growing interdependence of countries through flows of goods, services, money, people, technology and ideas. Kelley Lee describes three dimensions of global change:

Dimension	Meaning	Health example
Spatial	Distance and borders become less important as the world shrinks	Air travel carries an infectious person across continents within hours; international trade in food and medicines
Temporal	Speed: events happen faster and information moves instantly	Real-time outbreak reporting; a disease spreads before a response can be organised; 24-hour news and social media
Cognitive	Changes in awareness, ideas, culture and values	Shared global health goals; but also global marketing of tobacco and processed foods, and the spread of misinformation about vaccines

Driving forces include trade liberalisation and global markets; information and communication technology; cheaper and faster transport; global finance and investment; migration and displacement; international governance and norms; and global environmental change, including climate change.

2. How globalisation affects health

Benefits	Harms and risks
Sharing of knowledge, guidelines and research (for example open access evidence)	Rapid spread of infectious diseases; antimicrobial resistance
Faster development and distribution of vaccines and medicines (Gavi, Global Fund, pooled procurement)	Marketing of tobacco, alcohol and ultra-processed food; spread of unhealthy lifestyles
Funding for disease programmes and	Unequal access to new products; the effects of

humanitarian relief	intellectual property rules on prices
Telemedicine, digital health and remote training	Brain drain: migration of health workers from low-income to high-income countries
Remittances and economic growth that fund health and education	Dependence on external funding and sudden shocks when donors change policy
Global norms (International Health Regulations, Framework Convention on Tobacco Control)	Climate change and environmental harm from global production and consumption

Global health is the area of study, research and practice that gives priority to improving health and achieving equity in health for all people worldwide. It emphasises transnational problems and solutions, interdisciplinary work and the whole population. **International health** traditionally meant help from rich to poor countries, and **public health** is concerned with the health of the population within a community or nation. In practice, they overlap.

3. Global burden of disease

The **Global Burden of Disease (GBD)** study measures the loss of health from diseases, injuries and risk factors. Its main measure is the **disability-adjusted life year (DALY)**: one DALY is one lost year of healthy life. **DALY = YLL + YLD**, where YLL are years of life lost to premature death and YLD are years lived with disability.

> **Evidence update (2025 to 2026).** The GBD 2023 study estimated 60.1 million deaths worldwide in 2023, including 4.67 million children under five; NCDs now account for nearly two-thirds of deaths and ill health. Heat- and cold-related deaths rose by about 6 percent a year from 2013 to 2023 [GBD 2023]. WHO's World Health Statistics 2026 reports that life expectancy and healthy life expectancy are still slightly below 2019 levels; that COVID-19 caused 22.1 million excess deaths in 2020 to 2023; that none of the 52 health-related SDG indicators is on track; that the maternal mortality ratio is 197 per 100,000 live births (against a target below 70); that new HIV infections fell 40 percent since 2010 to 1.3 million; and that only about a third of deaths are reported with a cause [WHO 2026 summary] [Health Policy Watch 2026].

4. Current global health priorities

- **Primary health care and UHC:** 4.6 billion people lack full coverage of essential services and 2.1 billion face financial hardship [UHC report 2025].
- **Health security:** preparedness for epidemics and pandemics; the amended IHR and the Pandemic Agreement.
- **Health financing:** official development assistance for health in 2025 was estimated at 30 to 40 percent below 2023 levels, and the WHO Assembly in 2025 adopted a resolution on the global health financing emergency [Health Policy Watch 2026] [WHA78 2025].
- **NCDs and mental health:** the 2025 UN political declaration [WHO NCD 2025].
- **Climate, environment and air pollution.**
- **Infectious diseases:** HIV, TB, malaria, hepatitis, neglected tropical diseases, vaccine-preventable diseases; antimicrobial resistance.
- **Maternal, newborn, child and adolescent health and nutrition.**
- **Health workforce, data and digital health, including governance of artificial intelligence.**
- **Equity, humanitarian crises and fragile settings.**

5. Global health actors

Actor	Role
World Health Organization (WHO)	Directing and coordinating authority on international health; sets norms and standards; World Health Assembly; IHR secretariat; technical support to countries (WHO AFRO and the Ethiopia country office)
UN agencies (UNICEF, UNFPA, UNAIDS, WFP, FAO, UNEP)	Specific technical and humanitarian mandates; supplies, nutrition, reproductive health, food security
World Bank and regional development banks	Financing, loans, health system reform, results-based financing, economic analysis
Global health initiatives (Gavi, the Global Fund, Global Financing Facility)	Pooled finance and procurement for vaccines and diseases programmes
Bilateral donors and development agencies	Government-to-government aid; the 2025 dissolution of USAID and cuts by other donors changed the landscape
Philanthropies and foundations	Funding research and products; for example Gates Foundation, Wellcome
Africa CDC and regional bodies	Continental health security, coordination, local manufacturing
Non-governmental and faith-based organisations; civil society	Service delivery, advocacy, community engagement
Private sector and academia	Products, innovation, research, training, technology

6. Key agreements and initiatives

- **Sustainable Development Goals (2015 to 2030):** SDG 3 on health and well-being, and links to all 17 goals (Chapter 9).
- **International Health Regulations (IHR 2005):** legally binding rules for detecting, reporting and responding to health events. The 2024 amendments entered into force on 19 September 2025; they add a new 'pandemic emergency' alert level above a Public Health Emergency of International Concern, call for a National IHR Authority in each country and strengthen equitable access to medical products and financing [WHO IHR 2025].
- **WHO Pandemic Agreement:** adopted by the World Health Assembly on 20 May 2025 to improve prevention, preparedness and response and promote equitable access to vaccines and medicines. It cannot be signed until the Pathogen Access and Benefit Sharing (PABS) annex is finalised; by 1 May 2026 negotiators needed more time and asked the 79th Assembly to extend the mandate [WHA78 2025] [WHO PABS 2026]. Check WHO's website for the latest status.
- **Framework Convention on Tobacco Control (2003)** and the Immunisation Agenda 2030; the End TB Strategy; the Global Technical Strategy for Malaria; the global HIV strategy.
- **Aid effectiveness and reform:** the 2023 Lusaka Agenda calls for global health initiatives to align with national plans and systems.

Ethiopia in the global system. In 2025 to 2026 Ethiopia faced its first Marburg outbreak (declared 14 November 2025 and ended 26 January 2026) with WHO and partner support [WHO DON 2026],

reductions in external funding of about 40 percent, and a UNICEF humanitarian appeal for 2026 that was 78 percent unfunded by mid-year [UNICEF SitRep 2026]. The lesson: global solidarity is essential, but national ownership and domestic financing must grow.

Key terms

Globalisation: Growing interdependence of countries through flows of goods, money, people, technology and ideas.

Spatial dimension: The shrinking of distance and borders.

Temporal dimension: The acceleration of events and information.

Cognitive dimension: Change in ideas, awareness and cultural values across the world.

Global health: Priority on improving health and equity for all people worldwide, with transnational and interdisciplinary approaches.

DALY: Disability-adjusted life year: years of life lost to early death plus years lived with disability.

IHR (2005): Legally binding rules for international response to public health events; amended in 2024.

PHEIC: Public Health Emergency of International Concern.

Pandemic emergency: New, higher level of alert under the amended IHR.

Pathogen Access and Benefit Sharing (PABS): Mechanism for sharing pathogens and genetic data and the resulting benefits (vaccines, tests, treatments); negotiated as an annex to the Pandemic Agreement.

Group task

Role-play (60 minutes). Simulate a World Health Assembly committee. Groups represent: a high-income donor country, Ethiopia, Africa CDC, a pharmaceutical manufacturer, civil society and WHO. Agenda: how to share pathogens and benefits fairly (PABS). Each group states its three priorities and negotiates a one-page position. Debrief: what trade-offs did you face, and what would make a deal fair?

Key takeaways

- Globalisation brings both health gains and risks across space, time and ideas.
- The burden of disease is shifting to NCDs, while old problems persist and SDG progress has stalled.
- IHR (2024 amendments) and the Pandemic Agreement are the pillars of global health security.
- Funding shocks reveal the need for domestic ownership and integrated systems.

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Chapter 7. Emerging and Re-emerging Public Health Problems (3 hours, week 2)

Public health never gets to rest. New infections appear (Marburg in Ethiopia in 2025), and old ones return (measles, cholera, dengue, malaria in new places). This chapter shows why they emerge and how health systems detect and stop them.

Objectives

- Define emerging and re-emerging diseases and explain the drivers of their appearance.
- Describe zoonotic, vector-borne and foodborne threats and bioterrorism, with examples.
- Explain the links between climate change and health.
- Outline the steps of emergency preparedness and outbreak control.

1. Definitions

- **Emerging infectious disease:** an infection that has newly appeared in a population, or has existed but is rapidly increasing in incidence or spreading to new places. Examples: HIV/AIDS, SARS, MERS, Ebola, Zika, COVID-19, mpox clade I.
- **Re-emerging infectious disease:** an infection that was once controlled and has come back or become a problem again. Examples: cholera, tuberculosis (including drug-resistant TB), measles, dengue, polio, malaria in highlands.
- **Public health emergency:** an event with a serious and often unexpected threat to health that needs an urgent response beyond routine capacity.

2. Driving forces

Driver	Examples
Microbial adaptation	Mutation, antimicrobial resistance, new influenza strains, drug-resistant TB
Changes in human behaviour and demography	Urbanisation, crowding, migration, mass gatherings, unsafe sex, injecting drug use, hunting and eating wild animals
Land use and ecological change	Deforestation, farming near forests, dams and irrigation (more vector breeding), mining
Travel and trade	Rapid movement of people, animals and food across countries
Climate and weather	Changing rainfall and temperature affect vectors, floods promote cholera, drought drives malnutrition and displacement
Breakdown of public health measures	Falling vaccination coverage, weak surveillance, funding cuts
Poverty, conflict and famine	Crowded displacement camps, poor water and sanitation, collapsed health services
Technology, industry and intent	Intensive livestock farming, industrial food production, laboratory accidents, deliberate release (bioterrorism)

3. Emerging zoonotic diseases

About three out of four emerging infections come from animals. **Spillover** occurs when a pathogen passes from an animal reservoir to people, for example through hunting, butchering, contact with bats, consumption of raw milk or meat, or encroachment on forests. The main zoonoses of concern are Ebola and Marburg viruses (fruit bats), coronaviruses (SARS, MERS, SARS-CoV-2), avian and swine influenza, Nipah virus, Rift Valley fever, anthrax, brucellosis, rabies and mpox.

> **Case study: Marburg in Ethiopia (2025 to 2026).** The first known case had symptoms on 23 October 2025. Ethiopia declared its first Marburg virus disease outbreak on 14 November 2025 after laboratory confirmation in Jinka town, South Ethiopia Region. In all, 19 cases were recorded: 14 confirmed (9 deaths, case fatality 64.3 percent) and 5 probable (all deaths), in Jinka, Malle and Dasench woredas and in Hawassa. The government set up a national taskforce, a three-month response plan, two treatment centres and a mobile laboratory; 857 contacts completed 21 days of follow-up and about 3,800 samples were tested. The last confirmed patient was safely buried on 14 December 2025, and after a 42-day countdown the Ministry of Health declared the outbreak over on 26 January 2026. WHO advises that the risk of re-emergence remains because of animal spillover, and advises against travel or trade restrictions on Ethiopia [WHO DON 2026].
>
> **Key idea.** Four pillars of the Marburg response: find cases quickly (surveillance and laboratory), isolate and treat (infection prevention and control), trace and follow contacts, and engage communities (risk communication, safe and dignified burials).

4. Vector-borne diseases

Vector-borne diseases are transmitted by mosquitoes, ticks, sandflies, tsetse flies and other arthropods. Malaria, dengue, chikungunya, yellow fever, leishmaniasis, lymphatic filariasis and trypanosomiasis are examples.

- **Malaria:** 282 million cases and 610,000 deaths in 2024, with Ethiopia a major contributor to the increase. Challenges: artemisinin partial resistance, the invasive urban vector *Anopheles stephensi*, insecticide resistance, conflict and funding gaps [WHO malaria 2025].
- **Dengue:** spreads in cities with *Aedes* mosquitoes. Afar region held a high-level advocacy meeting on dengue prevention and response in 2026 [UNICEF SitRep 2026].
- **Control:** integrated vector management (nets, indoor residual spraying, larval source management, environmental management, community engagement), early diagnosis and treatment, surveillance of vectors and resistance, vaccines where available.

5. Foodborne and waterborne diseases

WHO estimates that unsafe food causes about 600 million illnesses and 420,000 deaths each year (estimate published in 2015, still widely used), with children under five bearing a large share. Causes include bacteria (*Salmonella*, *E. coli*, *Campylobacter*, *Listeria*), viruses (hepatitis A, norovirus), parasites, chemicals (aflatoxin) and contaminated water (cholera, typhoid). WHO's **Five Keys to Safer Food** are: keep clean; separate raw and cooked; cook thoroughly; keep food at safe temperatures; use safe water and raw materials. Control also needs food regulation, inspection and traceability (in Ethiopia the Ethiopian Food and Drug Authority and the Ministry of Agriculture), market hygiene, and sanitation. Cholera outbreaks recur in Oromia and other regions [UNICEF SitRep 2026].

6. Bioterrorism threats

Bioterrorism is the deliberate release of viruses, bacteria or toxins to harm or intimidate. Agents of highest concern are anthrax, smallpox, plague, botulinum toxin, tularaemia and viral haemorrhagic fevers. The Biological Weapons Convention (in force since 1975) bans development and stockpiling of such weapons. The anthrax letters in the United States in 2001 showed that even a small attack can cause fear and strain the system. Preparedness uses the same capacities as for natural outbreaks: surveillance, laboratories, clinician awareness, stockpiles and plans, risk communication and legal powers, plus cooperation with security services and attention to the ethics of dual-use research.

7. Climate change and health

WHO has described climate change as the single biggest health threat facing humanity. Pathways include:

- **Extreme heat:** heat stroke, cardiovascular and kidney disease. GBD 2023 estimated that heat- and cold-related deaths increased by about 6 percent a year between 2013 and 2023 [GBD 2023].
- **Floods and storms:** injuries, drowning, damage to facilities, cholera and other water-related disease.
- **Drought and food insecurity:** acute malnutrition, displacement. In 2026, UNICEF-supported centres in Ethiopia admitted 328,422 children for severe acute malnutrition in six months [UNICEF SitRep 2026].
- **Changing vector ranges:** malaria and dengue move into new highland and urban areas.
- **Air pollution and mental health:** fires, dust, household smoke; anxiety and trauma after disasters.
- **Health systems:** disrupted services and supply chains.

WHO reported in 2025 that nearly 60 percent of new health emergencies in the previous year were climate-related, and the 2025 World Health Assembly set a target to halve the health effects of air pollution by 2040 [WHA78 2025]. Responses combine **mitigation** (cutting emissions, clean household energy, active transport; with large health co-benefits) and **adaptation** (climate-resilient health facilities, early warning, surveillance and community preparedness).

8. Emergency preparedness and control

Phase	Public health actions
Prepare	Surveillance (Integrated Disease Surveillance and Response), laboratories, rapid response teams, stockpiles, plans and simulation exercises, training, risk communication, IHR core capacities
Detect	Case definitions, alert thresholds, event-based surveillance, community reporting, laboratory confirmation
Respond	Investigate, confirm, notify, isolate, treat, trace contacts, vaccinate, control vectors, communicate with communities, protect health workers
Recover and learn	Restore services, review (after-action and intra-action reviews), strengthen the system

A useful benchmark is the **7-1-7 target**: detect a suspected outbreak within 7 days of emergence, notify public health authorities within 1 day, and complete the early response actions within 7 days. The amended IHR and the Pandemic Agreement stress strong national capacity, including a National IHR Authority [WHO

IHR 2025]. Vaccine-preventable outbreaks, such as measles, are also a sign of weak immunisation: in 2025, 57 countries reported large or disruptive measles outbreaks [WUENIC 2025].

Key terms

Emerging infection: A new infection, or one rapidly increasing in incidence or range.

Re-emerging infection: An infection once controlled that has returned.

Zoonosis: Disease transmitted between animals and people.

Spillover: Transmission of a pathogen from an animal host to people.

Case fatality rate (CFR): Proportion of confirmed cases who die from the disease.

Vector: An organism, such as a mosquito, that transmits an infectious agent.

Integrated vector management: Combination of vector control methods used rationally.

Bioterrorism: Deliberate release of biological agents or toxins to cause harm or fear.

Mitigation / adaptation: Cutting greenhouse gas emissions versus adjusting to climate effects.

7-1-7: Target of 7 days to detect, 1 day to notify, and 7 days to complete early response.

Group task

Tabletop exercise (60 minutes). The facilitator reads a scenario in three phases (suspicious cluster, confirmation, spread to a town). Each group is the district health team: decide who to notify, what to do in the first 24 hours, how to communicate with the community, and what resources to request. After each phase the facilitator adds an inject (a rumour, a health worker infection, a funeral). Debrief with the 7-1-7 target.

Key takeaways

- New and returning diseases are driven by ecological, social, economic and technological change.
- One Health and community engagement were central to ending Ethiopia's first Marburg outbreak.
- Climate change is a health threat multiplier and requires both mitigation and adaptation.
- Preparedness depends on surveillance, laboratories, trained staff, plans and trust.

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Chapter 8. Evidence-Based Public Health and Healthcare Practice (4 hours, week 3)

Good intentions do not make good programmes. Some well-loved interventions do nothing, and a few cause harm. Evidence-based practice gives you a disciplined way to ask what works, for whom and under what conditions, and then to use the answer with respect for people's values and local reality.

Objectives

- Define evidence-based medicine (EBM) and evidence-based public health (EBPH) and explain the rationale for them.
- Apply the steps of EBM and EBPH, including framing a question (PICO) and appraising evidence.
- Compare EBM and EBPH, and describe the types and hierarchy of evidence, including GRADE.
- Explain knowledge translation and how to evaluate and improve evidence-based practice.

1. Definitions and development

- **Evidence-based medicine (EBM):** the conscientious, explicit and judicious use of current best evidence in decisions about the care of individual patients (Sackett and colleagues, 1996). It integrates the best research evidence with clinical expertise and the patient's values.
- **Evidence-based public health (EBPH):** the process of integrating science-based interventions with community preferences to improve the health of populations (Kohatsu, Brownson and colleagues). Jenicek defined it as the use of the best available evidence in decisions about the care of communities and populations in health protection, disease prevention and health promotion.
- **Evidence-informed policy:** recognises that research is one input among others (resources, politics, values, context).

Milestones: Archie Cochrane's 1972 book *Effectiveness and Efficiency* called for randomised trials and for systematic summaries of them; the Cochrane Collaboration began in 1993; EBM was promoted by Guyatt, Sackett and colleagues in the early 1990s; the US Community Preventive Services Task Force and its *Community Guide* in the 1990s; WHO's Evidence-Informed Policy Network (EVIPNet) in 2005; and WHO's Guidelines Review Committee (2007) with the GRADE method for developing guidelines.

2. Rationale

- Resources are scarce: we must spend them on what works.
- Some popular interventions are ineffective or harmful (for example 'scared straight' programmes for delinquents, and some drug education programmes).
- Programmes are more likely to be **effective, efficient and equitable**, and public money is better used.
- Transparency and accountability to communities and funders.
- Better and faster decisions in emergencies, as shown by the improvement of TB regimens or vaccination schedules after new evidence.

3. Steps in EBM and EBPH

EBM: the five A's. (1) **Ask** a focused, answerable question using PICO (Population, Intervention, Comparison, Outcome); (2) **Acquire** the best evidence (databases such as PubMed, Cochrane Library, WHO guidelines); (3) **Appraise** it for validity, size of effect and applicability; (4) **Apply** it with the patient's values and circumstances; (5) **Assess** the result.

EBPH: seven steps (after Brownson and colleagues):

- **1. Community assessment:** engage the community and understand its needs and assets.
- **2. Quantify the issue:** use data on size, trends and inequalities.
- **3. Develop a concise issue statement** (problem, who is affected, causes, size, solutions).
- **4. Determine what is known:** search for systematic reviews, guidelines and local studies.
- **5. Develop and prioritise options** for programmes and policies.
- **6. Develop an action plan and implement.**
- **7. Evaluate** the programme or policy and use the results.

4. Similarities and differences between EBM and EBPH

Feature	EBM	EBPH
Unit	Individual patient	Community or population
Typical question	Does drug X work for this patient?	Does a school-based programme reduce teenage pregnancy in this district?
Evidence base	Randomised trials and meta-analyses are common and appropriate	Often observational, quasi-experimental, modelling, qualitative and policy evaluation; trials are not always possible or ethical
Time from action to outcome	Usually short	Often long (years or decades)
Decision makers	Clinician and patient	Communities, managers, politicians, many sectors
Influences	Patient values, clinical expertise	Community values, politics, resources, equity, feasibility, context

What they share: both use explicit methods to find, appraise and use the best available evidence, and both must monitor the results of what they do.

5. Types of evidence and the hierarchy

Brownson's three types of evidence: **Type 1** tells us the size, severity and preventability of a problem (what should we do?); **Type 2** tells us which interventions work (what works?); **Type 3** tells us how to implement them in a given setting (how and where?). Public health usually has plenty of Type 1 evidence, less of Type 2 and the least of Type 3.

The hierarchy of evidence for questions on the effects of interventions, from strongest to weakest: systematic reviews and meta-analyses of randomised trials; randomised controlled trials; cohort studies; case-control studies; cross-sectional studies and case series; expert opinion. Qualitative studies are needed to understand acceptability and implementation. The hierarchy is a guide, not a rule: a poorly done trial can be less reliable than a well-done cohort study.

GRADE (Grading of Recommendations, Assessment, Development and Evaluation) rates the *certainty of evidence* as high, moderate, low or very low, based on risk of bias, inconsistency, indirectness, imprecision and publication bias (it can be upgraded for large effects). It rates the *strength of a recommendation* as

strong or conditional using an **evidence-to-decision framework** that also considers benefits and harms, values, resources, equity, acceptability and feasibility. WHO uses this method for its guidelines.

6. Appraising evidence quickly

- Is the question clear and relevant to my population?
- Is the design appropriate? Were groups comparable? Is there a risk of bias or confounding?
- How large is the effect (risk ratio, absolute risk reduction) and how precise (confidence interval)?
- Is it applicable here (setting, resources, culture, equity)?
- Are there conflicts of interest? Is the source reliable and up to date?

> **Key idea.** Generative AI tools can write fluent text that cites studies that do not exist. Always check that a reference exists and says what is claimed. Prefer primary sources, WHO, Ministry of Health and peer-reviewed databases.

7. Knowledge translation and use

Knowledge translation is the process of synthesis, dissemination, exchange and ethically sound application of knowledge to improve health. Evidence does not use itself. Common barriers are lack of time, skills and access; evidence not in the right form; weak links between researchers and decision makers; competing political priorities; and lack of resources. Strategies include: involving decision makers in framing questions; **evidence briefs** and **policy dialogues** (EVIPNet); rapid reviews for urgent decisions; training; embedded researchers; using local data in dashboards; and implementation science frameworks (RE-AIM, CFIR) to plan adaptation and scale-up.

8. Evaluating and improving evidence-based practice

Ask whether each step of EBPH was done well and whether it improved health. Monitor **process** (was the programme delivered as planned?), **outcome** (did knowledge, behaviour or service use change?) and **impact** (did health improve and did inequalities fall?). Use cycles of quality improvement (plan-do-study-act), audits, feedback to teams, and learning from failure. Build capacity: libraries, access to journals, critical appraisal skills, and data systems.

> **Evidence update.** The quality of evidence depends on data. WHO's 2026 statistics report found that only about 21 million of 61 million global deaths in 2023 were reported with a cause, and that only 18 percent of countries reported mortality data within a year [WHO 2026 summary] [Health Policy Watch 2026]. Evidence can also change quickly: the 2025 WHO–World Bank report on UHC shows that only one in three countries improved both service coverage and financial protection [UHC report 2025], a finding that should change how policies are designed.

> **Ethiopia.** The Ethiopian Public Health Institute (EPHI) produces national surveys, research and surveillance data and supports policy briefs. The Ministry's move to a 'triple elimination' approach for HIV, syphilis and hepatitis B in antenatal care is an example of evidence translated into routine practice [The Reporter 2026].

Key terms

Evidence-based medicine: Using the best current evidence together with clinical expertise and patient values to decide on care.

Evidence-based public health: Using science-based interventions together with community preferences to improve population health.

PICO: Population, Intervention, Comparison, Outcome: a format for a focused question.

Systematic review: A review that uses explicit methods to find, appraise and combine all relevant studies on a question.

Meta-analysis: Statistical combination of results of several studies.

GRADE: A system for rating the certainty of evidence and the strength of recommendations.

Evidence-to-decision framework: A structured way to consider evidence, values, resources, equity and feasibility when making a recommendation.

Knowledge translation: Moving knowledge into practice and policy.

Evidence brief: A short document that summarises the best evidence for a policy question.

Implementation science: The study of methods to promote the uptake of evidence-based interventions.

Group task

Journal club (60 minutes). Each group receives one short evidence summary (WHO guideline recommendation, Cochrane summary or a Ministry brief). In 25 minutes, appraise it with the checklist in section 6, rate the certainty informally (high to very low) and write a one-paragraph 'evidence brief' for the woreda health office. Present and compare the groups' decisions.

Key takeaways

- EBPH combines the best evidence, community values and context.
- Frame a question (PICO), find, appraise, apply, and evaluate.
- Public health often relies on observational and policy evidence; GRADE helps to judge certainty.
- Evidence needs translation, local data and capacity to be used.

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Chapter 9. Universal Health Coverage, SDGs, Ethiopian Health Policy and HSTP (2 hours, week 3)

Everyone should be able to get the health services they need without being pushed into poverty. This is the promise of UHC and the heart of SDG 3. In this short but dense chapter, you compare global progress with Ethiopia's own plans and numbers, and you learn to judge whether a country is on track.

Objectives

- Define universal health coverage (UHC), its dimensions and indicators, and the role of primary health care and financing.
- Describe the Sustainable Development Goals, especially SDG 3, and evaluate progress in different contexts.
- Outline the Ethiopian Health Policy, the HSDP I to IV, HSTP I and II and the current medium-term plan.
- Analyse UHC in Ethiopia: financing, community-based health insurance, the Health Extension Programme and equity.

1. Universal health coverage

UHC means that **all people have access to the full range of quality health services they need, when and where they need them, without financial hardship**. It includes health promotion, prevention, treatment, rehabilitation and palliative care. It is target 3.8 of the SDGs, and the world committed to it again in the 2023 UN political declaration.

UHC is often shown as a 'cube' with three dimensions: **who** is covered (population), **which services** are covered, and **what share of the cost** is covered (financial protection). Progress means filling all three: extending to people who are left out, adding services, and reducing out-of-pocket payment.

SDG indicator	What it measures
3.8.1 UHC Service Coverage Index (0 to 100)	Coverage of essential services in four areas: reproductive, maternal, newborn and child health; infectious diseases; non-communicable diseases; and service capacity and access
3.8.2 Financial hardship	Proportion of the population with large out-of-pocket health spending relative to household budget (catastrophic spending) and impoverishment

Evidence update (WHO–World Bank, December 2025). The global UHC service coverage index rose from 54 in 2000 to 71 in 2023 and is projected to reach 74 by 2030. The share of people facing financial hardship fell from 34 percent to 26 percent between 2000 and 2022. Yet 4.6 billion people still lack full coverage of essential services; 2.1 billion experience financial hardship, of whom 1.6 billion are in poverty or pushed deeper into it by health costs; medicines are at least 55 percent of out-of-pocket spending in three quarters of countries with data; and only one third of countries improved both service coverage and financial protection. In 2022 about 3 in 4 people in the poorest group faced hardship, against fewer than 1 in 25 in the richest [UHC report 2025].

Pathways to UHC: strong primary health care; public financing through general taxes and compulsory insurance with pooling of funds so that the healthy subsidise the sick and the rich subsidise the poor; strategic purchasing; a defined benefit package; a trained and motivated workforce; reliable medicines and supply; information systems; and attention to equity ('progressive universalism': expand first for those who are worst off).

2. The Sustainable Development Goals

The 2030 Agenda (2015) has 17 goals and 169 targets that are integrated and indivisible, and promise to 'leave no one behind'. **SDG 3** is 'Ensure healthy lives and promote well-being for all at all ages', with 13 targets:

Target	Main content (by 2030)
3.1	Maternal mortality ratio below 70 per 100,000 live births
3.2	Neonatal mortality at most 12 and under-five mortality at most 25 per 1,000 live births
3.3	End the epidemics of AIDS, TB, malaria and neglected tropical diseases; combat hepatitis and water-borne diseases
3.4	Reduce premature mortality from NCDs by one third; promote mental health
3.5	Prevent and treat substance abuse, including harmful use of alcohol
3.6	Halve deaths and injuries from road traffic crashes
3.7	Universal access to sexual and reproductive health services
3.8	Achieve UHC, including financial risk protection
3.9	Reduce deaths and illness from hazardous chemicals and air, water and soil pollution
3.a	Strengthen implementation of the Framework Convention on Tobacco Control
3.b	Support research and development, and access to affordable medicines and vaccines
3.c	Increase health financing and the recruitment, training and retention of the health workforce
3.d	Strengthen capacity for early warning, risk reduction and management of health risks

Health is linked to many other goals: poverty (1), hunger and nutrition (2), education (4), gender equality (5), water and sanitation (6), energy (7), work (8), cities (11), climate action (13) and peace (16).

> **Status in 2026.** WHO's World Health Statistics 2026 concluded that none of the 52 health-related SDG indicators is on track at global level. Malaria incidence rose 8.5 percent against a target of a 90 percent cut; TB incidence had fallen by only 12 percent of the 80 percent target; the maternal mortality ratio was 197 per 100,000 (2023) and falls only 1.6 percent a year while about 15 percent is needed; DTP3 coverage plateaued near 85 percent; tobacco use fell 27 percent and alcohol use 13 percent since 2010,

and about a billion more people gained safely managed drinking water since 2015 [Health Policy Watch 2026] [WHO 2026 summary].

3. Ethiopian health policy and plans

Period	Instrument	Main features
1993	National Health Policy	Democratisation and decentralisation, emphasis on prevention and promotion, equitable access, intersectoral work, community participation, private sector participation, self-reliance
1997/98 to 2014/15	Health Sector Development Programme (HSDP) I to IV, in four five-year (or shorter) phases	Expansion of facilities and workforce; the Health Extension Programme from 2003/04; focus on MDGs, child and maternal health, malaria, HIV and TB
2015/16 to 2019/20	Health Sector Transformation Plan I (HSTP-I)	Four transformation agendas: equity and quality of health services, information revolution, caring, respectful and compassionate health workforce, and woreda transformation
2020/21 to 2024/25	HSTP-II	UHC through equitable and quality PHC, with emphasis on woredas, quality, financing and emergency preparedness; revised because of COVID-19, conflict and climate shocks
2023/24 to 2025/26	Health Sector Medium-Term Development and Investment Plan (HSDIP)	Nine strategic objectives from maternal, child and adolescent health to health financing and private sector engagement; builds on HSTP-II
From 2026	New medium-term health sector transformation plan (2026 to 2030, as described by the Ministry in early 2026)	Emphasis on cost-effectiveness, digitisation and integration of services [The Reporter 2026]

The HSDIP sets targets such as a maternal mortality ratio falling from 267 to 199 per 100,000 live births, under-five mortality from 47 to 44 and neonatal mortality from 26 to 21 per 1,000 live births, skilled birth attendance from 50 to 78 percent, Pentavalent-3 coverage from 61 to 80 percent, and malaria incidence from 47.2 to 17.9 per 1,000 population at risk [MoH HSDIP].

4. UHC in Ethiopia: where is the country?

- **UHC index:** 0.38 at the HSTP-II mid-term assessment, against a target of 0.58 for 2024/25. Progress has been limited [MoH HSDIP].

- **Health Extension Programme (HEP):** health extension workers at health posts and in households deliver the PHC package. A revised 2020 to 2035 roadmap creates village health leaders, three types of health post and new service packages [MoH HSDIP].
- **Financing:** the health share of the government budget was 7.2 percent in 2024/25 (down from 8.3 percent), roughly ETB 1,284 (about US$11) per person, well below the Abuja target of 15 percent. Out-of-pocket spending was 30.5 percent of total health expenditure, against the 20 percent threshold, and 4.2 percent of households faced catastrophic health costs. External sources accounted for 54.6 percent of the national capital health budget in 2024/25 [UNICEF budget brief] [MoH HSDIP].
- **Community-based health insurance (CBHI):** about 85 percent of woredas run CBHI and 11.1 million households (76 percent of eligible households in those woredas) were enrolled, against a target of 90 percent of woredas by 2025/26 [UNICEF budget brief]. Social health insurance for formal sector workers is a separate scheme. The 2022 Health Care Financing Strategy promotes domestic resource mobilisation, equity, efficiency and private sector engagement.
- **Outcomes:** stunting 39 percent (2022); skilled birth attendance 50 percent (2019); modern contraceptive use 41 percent (2019) [UNICEF budget brief].
- **Shocks:** conflict, drought, displacement, outbreaks and the fall in external aid (about 40 percent according to figures cited in 2026) strain services [The Reporter 2026] [UNICEF SitRep 2026].

Key idea. A reasonable assessment: Ethiopia has built a PHC network and community insurance that reach millions, but remains far from UHC because public spending per person is very low, out-of-pocket payment is high, and quality and equity gaps persist. Domestic financing, efficiency, a prioritised benefit package and resilient PHC are the next steps.

Key terms

Universal health coverage (UHC): All people get the quality services they need without financial hardship.

UHC service coverage index: Composite measure (0 to 100) of coverage of essential services, SDG indicator 3.8.1.

Catastrophic health spending: Out-of-pocket payment so large that it threatens household living standards (SDG 3.8.2).

Out-of-pocket payment: Direct payment by patients at the point of care.

Pooling: Collecting prepaid funds so that financial risk is shared across the population.

Progressive universalism: Expanding coverage first and most for the worst-off groups.

HSDP / HSTP: Ethiopia's successive sector-wide health plans.

Health Extension Programme (HEP): Ethiopia's community-based PHC programme using health extension workers.

Community-based health insurance (CBHI): Voluntary prepayment scheme, mainly for rural and informal sector households, with government subsidy for the poorest.

Abuja target: Commitment (2001) of African governments to spend 15% of their budget on health.

Group task

Policy brief (45 minutes). Groups write a one-page brief for the Minister titled 'Three actions to accelerate UHC in Ethiopia in the next 24 months'. Each action must cite at least one number from the chapter, state who will do it, and name one risk. Groups exchange briefs and give feedback using the criteria: evidence, feasibility, equity, financing.

Key takeaways

- UHC = access to quality services without financial hardship; track coverage and financial protection together.
- The SDGs are broad; global progress is off track and 2025 to 2026 funding cuts add risk.
- Ethiopia's policy path runs from the 1993 Policy through HSDP, HSTP and HSDIP; the HEP and CBHI are the main UHC vehicles.
- Low public spending and high out-of-pocket payment are the main constraints.

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Chapter 10. Needs Assessment in Public Health and Organising Public Health Programmes (Priority Setting) (2 hours, week 3)

Programmes fail when they answer the wrong question. A needs assessment helps you find out what a community needs, which problems matter most, and what can realistically be done. This final chapter turns the course into a practical method that you will use in your term project.

Objectives

- Distinguish types of need and explain the purpose of a community health needs assessment.
- Describe the steps of the assessment, planning, action and evaluation cycle.
- Use data collection methods and prioritisation tools (for example the Hanlon method and a weighted scoring matrix).
- Draft SMART objectives and a simple action plan for a priority health problem.

1. What is a health needs assessment?

A **community health needs assessment** (also called community diagnosis) is a systematic process of describing the health status and health needs of a defined population, the assets and services available, and the community's own views, in order to agree priorities and plan action that improves health and reduces inequalities. It answers four questions: What is the health of our community? What are the causes? What resources do we have? What should we do first?

Bradshaw's four types of need help to look at a problem from different sides:

Type	Meaning	Example
Normative need	Defined by experts against a standard	A health officer finds that only 60 percent of children are fully vaccinated against a target of 90 percent
Felt need	What people say they want or feel	Mothers say they want a closer health post
Expressed need (demand)	Felt need turned into action	Mothers walk long distances to a clinic, or sign a petition
Comparative need	Comparing similar groups	A neighbouring woreda with similar people has half the child mortality

A problem may be present in one type and absent in another: communities may not feel a need for something that experts judge urgent (for example hypertension screening), and the reverse can occur. Good planning looks at all four.

2. The cycle: assess, plan, act, evaluate

Stage	Key tasks
1. Prepare and engage	Define the purpose, scope and boundaries; identify stakeholders; form a team with community members, local government and partners; agree ethics and roles

2. Gather data (assess)	Collect and review data on demography, health status, determinants, services and assets, and community perceptions
3. Analyse and interpret	Calculate rates, trends and inequalities; compare with targets and with other places; identify gaps
4. Set priorities	Use agreed criteria and a transparent method; involve the community
5. Analyse the priority problem and plan	Problem tree; goals and SMART objectives; choose evidence-based interventions; action plan, budget, indicators, risks
6. Implement	Assign roles; mobilise resources; communicate; train; monitor
7. Evaluate and review	Process, outcome and impact; feed results back to the community; start the cycle again

Planning frameworks such as MAPP (Mobilizing for Action through Planning and Partnerships) describe the same logic of partnership, assessment, strategy and action. The cycle is not a straight line: you may return to an earlier stage as you learn more.

3. Collecting data

Method	Use	Notes
Secondary data review	Census, DHS, HMIS/DHIS2, surveillance reports, school records, woreda plans	Fast and cheap; check quality and age
Household or community survey	Prevalence, coverage and behaviours	Needs sampling and trained data collectors; use mobile data tools
Key informant interviews	Views of leaders, teachers, health workers, traditional healers	Rich insights; choose varied informants
Focus group discussions	Shared community views and norms	6 to 10 people; separate groups for women, men and youth
Observation, 'transect walk', community mapping, windshield survey	Water points, sanitation, housing, food markets, facilities	Shows the physical environment
Participatory rural appraisal tools (ranking, seasonal calendars, photovoice)	Involve people who may not be heard	Good for felt needs; supports ownership
Asset mapping	Identify resources: groups, schools, faith leaders, volunteers, traditional associations	Shifts attention from deficits to strengths

Triangulate: use more than one source and method. Disaggregate data by sex, age, wealth, disability and location so that inequity can be seen. Follow ethical rules: informed consent, privacy, safe storage and return of results to the community.

4. Setting priorities

Many problems compete for limited resources. Choose criteria and use a transparent method. Common criteria are:

- **Size** (how many are affected) and **severity** (how serious: deaths, disability, cost).
- **Trend** (getting worse?) and **inequity** (does it fall on the disadvantaged?).
- **Effectiveness of interventions** (is there something that works?) and **preventability**.
- **Feasibility** (resources, skills, time, political support) and **cost**.
- **Community concern** and acceptability.

Methods. *Weighted scoring matrix:* score each problem on each criterion (for example 1 to 5), multiply by a weight and add. *Hanlon method (Basic Priority Rating):* BPR = (A + B) × C ÷ 3 × D, where A is size (0 to 10), B seriousness (0 to 20), C effectiveness of solutions (0 to 10), and the **PEARL** test gives D as 1 if the answer is yes for each of Propriety, Economics, Acceptability, Resources and Legality (and 0 if any is no). Other methods include nominal group technique, multi-voting, and Delphi consensus. Try the scoring tool in the Activities tab.

5. From priority to plan

Problem analysis: a **problem tree** places the problem in the trunk, causes in the roots and effects in the branches. Turn it into an **objective tree**. Check the evidence (Chapter 8) for interventions that address the causes, and choose options that are effective, feasible and equitable.

Goals and objectives: a goal is the long-term aim; objectives are **SMART**: Specific, Measurable, Achievable, Relevant and Time-bound. Example: 'By December 2027, increase the proportion of children aged 12 to 23 months fully vaccinated in Woreda X from 62 to 80 percent.'

Logic model: inputs (money, staff, vaccines) → activities (outreach sessions, community mobilisation) → outputs (sessions held, children reached) → outcomes (coverage rises, dropout falls) → impact (fewer vaccine-preventable deaths).

Action plan: list activities, responsible persons, timeline, budget, indicators (with baseline and target), data sources and risks, and how the community will be informed and involved. Plan monitoring from the start.

6. Evaluating and sustaining

- **Process evaluation:** were activities delivered as planned and to whom?
- **Outcome and impact evaluation:** did coverage, behaviour or health change, and did inequality narrow?
- **Learning and sharing:** report results to the community, partners and decision makers; adapt the plan.
- **Sustainability:** integrate into woreda plans and budgets, build local skills, and avoid parallel structures.

Ethiopia. Needs assessments feed into the woreda annual plan, which brings together health, finance and other offices. In the woreda transformation approach, health extension workers and kebele leaders collect community data and use it for local planning. The HSDIP's focus on equity and quality means that assessments must pay attention to pastoralist, displaced and conflict-affected groups [MoH HSDIP].

Evidence update. With external funding falling by roughly 30 to 40 percent [Health Policy Watch 2026], prioritisation has become more important than ever: districts must choose the most cost-effective,

equitable interventions, protect essential services such as immunisation and maternal and newborn care, and build on community assets. Digital tools (DHIS2 dashboards, mobile data collection) make local assessment faster, but data quality and privacy must be protected.

Key terms

Community health needs assessment: Systematic description of a community's health status, needs and assets to guide priorities and action.

Normative need: A need defined by professionals against a standard.

Felt need: What the community says it wants.

Expressed need: A felt need turned into demand or action.

Comparative need: A need identified by comparing with similar groups.

Triangulation: Using several data sources or methods to check findings.

Hanlon method (BPR): Priority-setting formula using size, seriousness, effectiveness of solution and the PEARL test.

PEARL: Propriety, Economics, Acceptability, Resources, Legality.

Problem tree: Diagram of a problem's causes and effects.

SMART objective: Specific, Measurable, Achievable, Relevant, Time-bound.

Group task

Term project clinic (45 minutes). Bring your draft project proposal. In groups of four, each member presents their problem and data sources in three minutes. The group uses the scoring tool to test whether the problem is a priority, then gives feedback using three questions: Is the objective SMART? Does the plan address a root cause? Is the community involved? Revise your problem statement and action plan after the session.

Key takeaways

- A needs assessment combines data with community voices to decide what matters most.
- Follow the cycle: assess, analyse, prioritise, plan, act, evaluate.
- Prioritise with clear criteria and transparent methods; check feasibility and equity.
- Write SMART objectives and a monitored action plan.

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