Unravelling Complexity in Health

HEALTH & MEDICINE

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Learning Outcomes

By the end of the lecture and tutorial, students should be able to:

- Explain health and the social, cultural, environmental and structural factors which interact to influence health
- Examine health through the lens of intersectionality
- Evaluate sources of global health inequity using a social justice lens

This E-Book should be reviewed alongside the lecture videos and the *required reading* materials. This PDF is interactive. Please click on the links to navigate through the E-Book content.

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KEY CONCEPTS: HEALTH & MEDICINE

HEALTH EQUITY

Health equity is the absence of unfair, avoidable, and remediable differences in health among population groups defined socially, economically, demographically, or geographically (Braveman, 2006). It asks whether avoidable gaps exist, whether they systematically affect particular groups, and whether they arise from systemic arrangements that could realistically be changed

DISTRIBUTIVE JUSTICE

Distributive justice requires that health services are accessible to individuals according to need and within the context of resource availability. It asks how limited resources, such as operating theatre time, ICU beds, or expensive medications, should be allocated. It focuses on

- Who is currently excluded by the way criteria are written or applied?
- Are rules based on ability to pay, social status, or convenience, rather than clinical need and likelihood of benefit? (Daniels, 2008).

HEALTH INEQUITY AND HEALTHCARE INEQUITY

Health inequities are those patterned differences in health status that track social gradients. An example would be higher rates of chronic obstructive pulmonary disease among low-income workers in hazardous occupations, rather than random variation (Whitehead, 1992). **Healthcare inequity**, by contrast, refers specifically to situations in which people with comparable health need do not receive comparable access to timely, appropriate, and effective care (Marmot, 2005). An example is when undocumented migrants delay seeking emergency care because they fear arrest or deportation, even when they have life-threatening conditions.[

INTERSECTIONALITY

A framework to explain how interlocking systems of power combine simultaneously to produce distinct forms of advantage and disadvantage that shape a person's social location and social power and, through that, their exposure to risk, access to care, and health outcomes.

HEALTH BEYOND MEDICINE

INTRODUCTION

When we think about health, we often default to medicine, but health and medicine are not equivalent. Medicine is a set of clinical practices aimed at preventing, diagnosing, and treating disease, whereas health is shaped by the interaction of biological processes with people's everyday living conditions, social relationships, and institutional environments (Germov, 2014). This means that two patients with the same diagnosis can have very different chances of recovery depending on factors such as income, housing, and social support.

The World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948).

In practice, this definition prompts us to ask a different kind of question in medicine: not only "What disease does this person have?", but also "What conditions in this person's life make it easier or harder for them to be well?"

Three features of this definition are especially important for clinical practice.

- First, health is multidimensional: it includes physical, mental, social (and, for many people, spiritual) dimensions, so symptoms and distress cannot be reduced to biology alone.
- Second, these dimensions are inter-related: experiences such as chronic stress, stigma, or social isolation can become biologically embodied over time, affecting cardio-metabolic, immune, and mental health outcomes (Marmot, 2005; Krieger, 2001).
- Third, health is dynamic across the life course: people's health potential rises or falls as they move

through changing environments, roles, and resources, which means that early-life conditions, work and housing, and access to care all shape trajectories rather than a fixed “state” of health.

- Germov, J. (2014). Health sociology and the social model of health. In Second opinion : An introduction to health sociology (pp. 5–22). Oxford University Press.
- Krieger, N. (2001). A glossary for social epidemiology. J Epidemiol Community Health, 55(10), 693–700. https://doi.org/10.1136/jech.55.10.693
- Marmot, M. (2005). Social determinants of health inequalities. Lancet, 365(9464), 1099–1104. https://doi.org/10.1016/s0140-6736(05)71146-6
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BIOMEDICAL & SOCIAL MODELS OF MEDICINE

THE BIOMEDICAL MODEL

The germ theory's ascendancy, together with advances in bacteriology and immunology, established that specific microorganisms cause characteristic infectious diseases and underpinned the biomedical model of medicine. This model has been crucial in controlling tuberculosis, pneumonia, influenza, and diarrhoeal diseases and in transforming surgery from a high-risk last resort into a routine life-saving intervention.

A key strength of the biomedical model is its precision: it allows us to identify pathogens, link them to specific pathophysiological changes, and evaluate interventions rigorously through clinical trials. However, the same period that saw spectacular declines in infectious mortality in some countries also saw persistent, or even widening, gaps in health between rich and poor, urban and rural, and majority and minority populations (Farmer, 2004; Marmot, 2005).

WHY THE BIOMEDICAL LENS IS NOT ENOUGH

Large epidemiological studies now show that education, income, work conditions, neighborhood characteristics and discrimination patterns predict disease risk and survival independently of clinical care (Solar & Irwin, 2010; Braveman et al., 2011). For example, in many settings, people with lower income have higher rates of cardiovascular disease and diabetes even when they have access to similar medical technologies, suggesting that everyday constraints, such as

food insecurity, unsafe work, or lack of time for self-care, are doing part of the causal work.

Emerging critiques, therefore, argue that health and disease cannot be understood solely as physicochemical events within bodies, and that a narrow focus on diagnosis and treatment overlooks how social experiences become biologically embedded over time (Engel, 1977; Krieger, 2001). This is the gap the social model of health was designed to address.

Rather than replacing biomedical science, it expands the lens to consider how gender, age, ethnicity, class, geography, socioeconomic status, sexuality, and disability shape health outcomes, access to care, and the lived experience of illness (Germov, 2014; Commission on Social Determinants of Health, 2008).

THE SOCIAL MODEL AS A FRAMEWORK

The social model of health broadens the analytical lens to ask three types of questions (Germov, 2014; Commission on Social Determinants of Health, 2008).

- Who is affected?
  Patterns by gender, class, ethnicity, geography, citizenship, disability, and age.
- Under what conditions?
  Housing, labor markets, education systems, social protection, and political arrangements.
- With what institutional response?
  How health systems, welfare, immigration, and legal systems facilitate or block care.

Rather than competing with the biomedical model of medicine, the social model is most useful because it helps clinicians understand why some groups present late, default from treatment, or have poorer outcomes despite guideline-based care. It moves the focus from asking only “What is wrong with this body?” to also asking “What is happening around this body that makes health harder to achieve?”

It highlights that who becomes ill, who receives timely and appropriate treatment, and who is able to recover are patterned by structural factors such as labour markets, migration regimes, welfare systems, and health-system design.

COMPLEMENTARITY OF THE MODELS

These developments do not negate the importance of medical care; rather, they underscore the need for a complementary approach in which biomedical and social models are used together. In practice, this means combining accurate diagnosis and effective treatment with attention to patients' social histories, material constraints,and exposure to discrimination, and with advocacy for policies that address upstream determinants of health (Braveman & Gruskin, 2003; World Health Organization, 2025). Using both lenses enables clinicians to respond not only to disease in the body, but also to the conditions that make some bodies more vulnerable than others.

For further reading: See [Germov's chapter in Second Opinion (pp. 9–18)]() for the three dimensions of the social model of health, and review Video 2 on the learning platform for a historical walk through of both models.

- Braveman, P., & Gruskin, S. (2003). Defining equity in health. Journal of Epidemiology and Community Health, 57(4), 254. https://doi.org/10.1136/jech.57.4.254
- Commission on Social Determinants of Health. (2008). Closing the gap in a generation: health equity through action on the social determinants of health: final report of the commission on social determinants of health. World Health Organization.
- Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. cience, 196(4286), 129–136. https://doi.org/10.1126/science.847460 Farmer, P. (2004). An anthropology of structural violence. Current Anthropology, 45, 305 – 325.
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- World Health Organization. (2025, November 19). Lifetime toll: 840 million women faced partner or sexual violence. [https://www.who.int/news/item/19-11-2025-lifetime-toll--840-million-women-faced-partner-or-sexual-violence[who]](https://www.who.int/news/item/19-11-2025-lifetime-toll--840-million-women-faced-partner-or-sexual-violence)

STRUCTURAL DISCRIMINATION AND HEALTH

WHAT IS 'STRUCTURE'?

Structure refers to laws and policies, economic arrangements, institutional rules, and dominant norms. These shape how resources, risks, and opportunities are distributed across groups (Bailey et al., 2017; Gee & Ford, 2011)

WHAT MAKES DISCRIMINATION "STRUCTURAL"?

Discrimination becomes structural when it is built into the everyday rules, routines, and resource flows of institutions such that unequal outcomes occur even without explicit bias at the individual level (Bailey et al., 2017; Gee & Ford, 2011).

Structural discrimination could be intentional or unintentional.

Examples include:

- Eligibility rules that exclude certain visa categories from public insurance.
- Hospital policies requiring documentation that some groups are less likely to possess.
- Urban planning that systematically leaves some neighborhoods without safe transport to health facilities.

These mechanisms, though routinely administrative or logistical, influence who reaches care early, who is turned away, and who gets the highest-quality services (Egede et al., 2024).

HIV AS A CASE STUDY IN STRUCTURAL DISCRIMINATION

HIV provides a concrete illustration of how global health inequities are organized through structures rather than individual choices. Across regions, the same virus produces very different patterns of infection and survival because people are

positioned differently within legal systems, labor markets, gender orders, and health systems ([UNAIDS, 2023](https://www.unaids.org/en/resources/documents/2023/global-aids-update-2023)). In many countries, those most affected, key populations and adolescent girls in particular, are also those most exposed to criminalization, stigma, economic dependence, and violence.

Concentration of new infections among key populations reflects institutions and laws (criminalization, policing practices, funding priorities), not simply individual risk-taking ([UNAIDS, 2023](https://www.unaids.org/en/resources/documents/2023/global-aids-update-2023)).

Disproportionate burden among adolescent girls in Sub-Saharan Africa points to education systems, gender norms, and economic dependence, not biology alone.

Seen through this lens, HIV statistics also become indicators of where and how structural power and resources are organized.

- Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the USA: evidence and interventions. Lancet, 389(10077), 1453–1463. https://doi.org/10.1016/s0140-6736(17)30569-x.
- Egede, L. E., Walker, R. J., & Williams, J. S. (2024). Addressing structural Inequalities, structural racism, and social determinants of health: A vision for the future. J Gen Intern Med, 39(3), 487–491. https://doi.org/10.1007/s11606-023-08426-7
- Gee, G. C., & Ford, C. L. (2011). Structural racism and health inequities: Old issues, new directions. Du Bois Review: Social Science Research on Race, 8(1), 115–132. https://doi.org/10.1017/S1742058X11000130
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Only **52% of countries** have government-established mechanisms for reporting HIV-related discrimination and to seek redress *(4)*.

Many countries retain discriminatory laws that restrict access to services:

156 countries criminalize HIV exposure, nondisclosure or transmission (or prosecute based on general laws).

63 countries criminalize consensual same-sex sexual relations.

13 countries have criminal laws that target trans and gender diverse people.

169 countries criminalize some or all aspects of sex work.

152 countries criminalize possession of small amounts of drugs.

In **102 of 145 countries** with available data, national laws or policies impose parental consent requirements for adolescents to access HIV testing services *(4)*.

A total of **48 countries** maintain travel restrictions for people living with HIV *(6)*.

UNAIDS, 2024

GLOBAL HEALTH INEQUITY: A SOCIAL JUSTICE LENS

Building on the definition of health inequity, global health inequities refer to systematic, avoidable, and unjust differences in health outcomes and access to healthcare services among populations worldwide.

Uneven access to essential vaccines is a classic example of global health inequity, which was starkly evident during the COVID-19 pandemic in the form of 'vaccine apartheid' between high- and low-income countries (Fox, Choi, and Lin, 2023). Global health inequities are also manifest in disparities in maternal and child health outcomes, differential prevalence and management of infectious diseases, and unequal distribution of healthcare resources, which highlights the pervasive nature of these disparities on a global scale.

Global health inequities are also evident in relation to social determinants such as education, income, and living conditions (Marmot, 2005). These dimensions intersect, creating complex patterns of disadvantage and privilege.

Global health inequities are shaped by historical, social, economic, and geopolitical factors, leading to disproportionate health burdens on vulnerable populations within and between countries.

Thus, a social justice lens invites at least three core questions (Mukherjee, 2018).

- Who disproportionately bears the burden of ill health and lacks access to care, and what are the historical and structural roots of these inequities?

- What systemic policies, economic forces, and societal structures perpetuate these patterns of global health disparity?
- What feasible policy changes, social movements, and practical actions are necessary to transform these patterns and achieve health equity as a human right?

POPULATION INDICATORS AS EVIDENCE OF GLOBAL HEALTH INEQUITY

Population-level indicators such as life expectancy and cause-of-death patterns are useful not only for describing health status, but also for revealing how underlying social and institutional structures advantage some groups and disadvantage others.

Life expectancy at birth:

Life expectancy at birth is a commonly used summary measure of population health. According to the **World Health Organization**, it estimates the average number of years a newborn is expected to live if current age- and sex-specific mortality rates remain constant. It does not set out to explain why mortality patterns differ, but large gaps in life expectancy between countries and between social groups within countries are often the first visible sign of deeper structural inequities in living conditions, protection from risk, and access to effective care.

When large gaps appear between regions, income groups, or ethnic categories, the question is not only "why are people dying earlier?" but "what shared conditions cluster in the groups with lower life expectancy?"

Visit the **WHO life expectancy at birth indicator page**. Explore how life expectancy at birth varies across countries, and notice that you can also view patterns by World Bank income group (low, lower-middle, upper-middle, high income).

Cause of death profiles:

High burdens of preventable causes (e.g., road injuries, occupational injuries) often indicate weak regulation, inadequate enforcement, or inequitable infrastructure, and access to care rather than "individual choices" regarding health.

In Malaysia, for example, state-level analyses linking higher poverty and unemployment to shorter life expectancy suggest that macroeconomic policy and

labour-market conditions are significantly associated with health outcomes (Tafran et al., 2020; Khazanah Research Institute, 2020).

Disability-Adjusted Life Years (DALYs)

Alongside population health indicators such as life expectancy at birth, disability-adjusted life years (DALYs) are also widely used to compare health loss across diseases, populations, and time.

A DALY represents one lost year of healthy life; it combines years of life lost due to premature death (YLL) and years lived with disability (YLD) into a single summary measure (Murray & Lopez, 1996).

$$DALY = YLL + YLD$$

In simple terms:

YLL= N × L: number of deaths (N) multiplied by the standard life expectancy at age of death (L) derived from a Reference Life Table representing the lowest possible risk of death observed globally.

YLD=I × DW × L: number of incident cases (I) multiplied by a disability weight (DW, between 0 = full health and 1 = equivalent to death) and the average duration of the condition in years (L).

DALYs are central to the Global Burden of Disease (GBD) studies and inform priority-setting by indicating which conditions account for the largest shares of health loss. However, just as crude mortality and national life expectancy say little about who within a country is benefiting, DALYs can also mask inequities if examined only at national level. A single DALY summary measure may hide much higher burdens among poorer households, particular regions, women, or minority groups. Wherever possible, DALYs and other population metrics should therefore be disaggregated, by sex, age, region, and socioeconomic position, so that inequities become visible and can be addressed through targeted policy and practice.

Click here to explore the **Global Burden of Disease data visualization tool** and compare data between individual countries and between genders and age groups for specific diseases.

Within the United States, and around the world, there is a significant wealth gap between those who are descendants of the enslaved and colonized and those who extracted their labor
Mukherjee J S, 2021

European settlers extracted 222,505,049 hours of forced labor from African slaves,
worth $97 trillion at the current US minimum wage
Jason Hickel, 2015

From 1503 to the early 1800s, Latin America supplied 100 million kg of silver, fueling the European economy and supporting capital accumulation for the industrial revolution.
Jason Hickel, 2015

Britain siphoned almost $45 trillion from India between 1765 and 1938.
Jason Hickel, 2018 in Chakrabarti and Utsa Patnaik (Eds), 2019

SALUD
BY
Xavier Cortada

INTERSECTIONALITY

Intersectionality is “a theoretical framework that posits that multiple social categories (e.g., race, ethnicity, gender, sexual orientation, socioeconomic status) intersect at the micro level of individual experience to reflect multiple interlocking systems of privilege and oppression at the macro, social-structural level (e.g., racism, sexism, heterosexism)” (Bowleg, 2012, p. 1267).

Introduced by Kimberlé Crenshaw, it examines how multiple social identities, such as gender, race, class, sexuality, citizenship, and disability, operate together to shape people’s social location and social power within institutions.

Instead of treating these identities one at a time, intersectionality focuses on how they intersect to create specific configurations of advantage and disadvantage in particular contexts. In health, this means that inequalities cannot be fully understood by looking only at “gender” or “poverty” or “migration” separately; it is the combination of these identities, and how systems respond to them, that helps explain why some patients consistently face more barriers and poorer outcomes than others (Caiola et al., 2014; Vohra-Gupta et al., 2022).

Rather than thinking of “women”, “migrants”, or “low-income patients” as homogeneous groups, intersectionality asks: Which women? Which migrants? Which workers? (Crenshaw, 1989; Bowleg, 2012). In a clinical context, an intersectional approach means routinely asking:

- Which of this patient’s social identities (e.g., gender, race, income, citizenship, disability) are likely to matter in this setting?
- At which points in the care pathway (registration, consent, clinical decision-making, billing, follow-up) are those identities likely to create risk or barriers?

For example, two patients with the same chronic condition may differ dramatically in their ability to adhere to treatment: one has

stable employment, childcare, and transport; the other works multiple jobs, has no paid leave, and cares for dependents. Intersectionality helps us see that “non-adherence” is often an indicator of constrained social power and constrained options, not a lack of motivation.

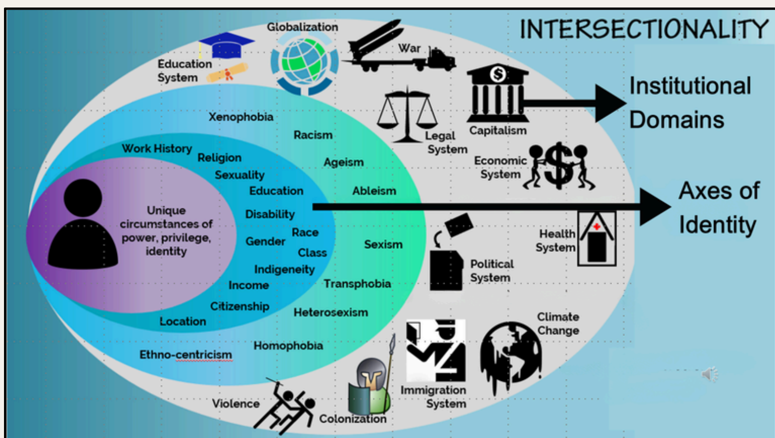
WHY THIS MATTERS FOR YOU AS A FUTURE DOCTOR

Intersectionality adds value when you use it to:

- Anticipate which patients might be silently struggling with logistics or fear and invite them to talk about these issues.
- Recognize that “difficult” encounters may sometimes be patients negotiating stigma, language barriers, or fear of legal consequences.
- Reflect on your own social position and institutional power, and how these shape what patients feel able to say or ask (Bowleg, 2012).

Practiced this way, intersectionality does not replace biomedical reasoning; it complements it by helping you understand why patients with the same diagnosis can have very different experiences of illness and care.

- Bowleg, L. (2012). The problem with the phrase women and minorities: Intersectionality—an important theoretical framework for public health. Am J Public Health, 102(7), 1267–1273. https://doi.org/10.2105/AJPH.2012.300750
- Caiola, C., Docherty, S. L., Relf, M., & Barroso, J. (2014). Using an intersectional approach to study the impact of social determinants of health for African American mothers living with HIV. ANS Adv Nurs Sci, 37(4), 287–298. https://doi.org/10.1097/ans.0000000000000046
- Vohra-Gupta, S., Petruzzi, L., Jones, C., & Cubbin, C. (2023). An intersectional approach to understanding barriers to healthcare for women. J Community Health, 48(1), 89–98. https://doi.org/10.1007/s10900-022-01147-8



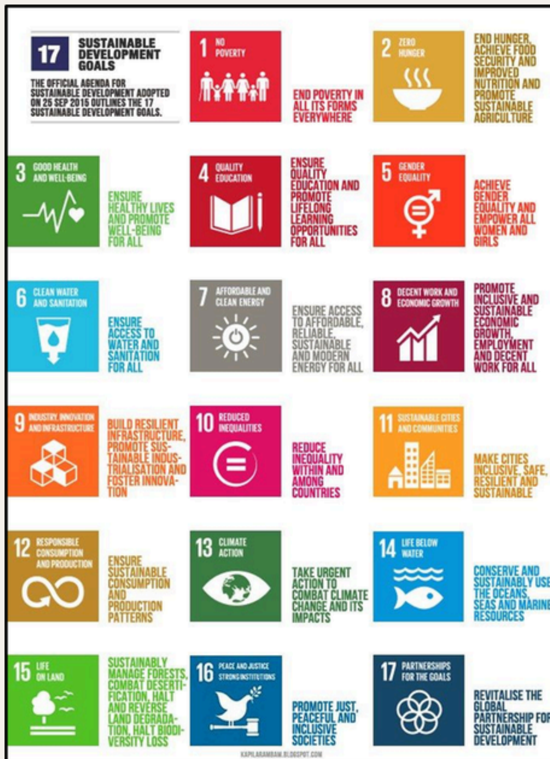
GLOBAL INITIATIVES RELATED TO HEALTH

Over the past several decades, the global community has adopted a series of political commitments aimed at reducing health disparities and advancing health equity. Key milestones include:

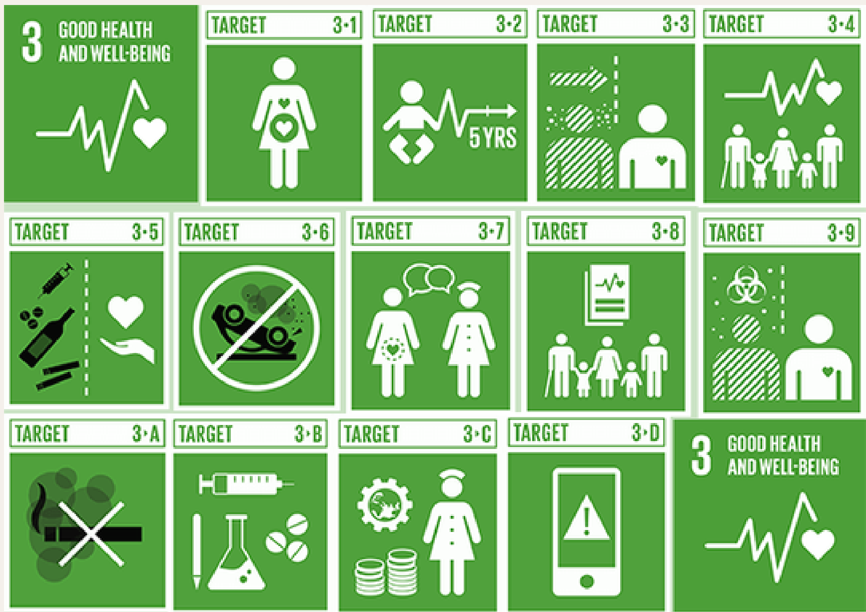
- Alma-Ata Declaration on Primary Health Care (1978): Framed health as a fundamental human right and called for "Health for All" through comprehensive primary health care and intersectoral action.
- Ottawa Charter for Health Promotion (1986): Identified peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity as prerequisites for health, and emphasised enabling people to increase control over their health.
- WHO Commission on Social Determinants of Health (CSDH) (2005–2008): Synthesised global evidence on how social conditions shape health and called for action to "close the gap in a generation."
- Millennium Development Goals (MDGs) (2000–2015): Set global targets to reduce child mortality, improve maternal health, and combat HIV/AIDS, malaria, and other diseases, with mixed but important gains in many low- and middle-income countries.
- Astana Declaration on Primary Health Care (2018): Reaffirmed primary health care as the foundation of universal health coverage and a cornerstone of sustainable development.
- The 2030 Agenda for Sustainable Development (SDGs) (2015–2030): Established 17 interlinked goals that integrate health, social, economic, and environmental objectives.

You will explore the Alma-Ata and Astana declarations in more detail in the module on Primary Health Care.

THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT(SDGS)



The Sustainable Development Goals (SDGs) provide a shared global framework of 17 goals that seek to end poverty, protect the planet, and ensure peace and prosperity by 2030 (United Nations, 2015). Health is both a specific goal and a cross-cutting outcome of progress in areas such as poverty reduction, education, gender equality, and clean water and sanitation.



G**OAL 3:**

Good Health and Well-Being focuses on “ensuring healthy lives and promoting well-being for all at all ages.”

It includes targets to reduce maternal and child mortality, end epidemics of major infectious diseases, reduce premature mortality from non-communicable diseases, strengthen prevention and treatment of substance use, reduce road traffic injuries, achieve universal health coverage, and reduce deaths from environmental hazards.

For an overview of the SDGs and the specific targets under Goal 3, see:

- **UN SDGs** - **https://www.undp.org/sustainable-development-goals https://**
- **Goal 3** - **www.un.org/sustainabledevelopment/health/**

REQUIRED READING

From SOCIAL MEDICINE AND PUBLIC HEALTH), page 9 to page 18 (end of THE THREE DIMENSIONS OF THE SOCIAL MODEL OF HEALTH)
Germov J. Health sociology and the social model of health. 2014. In: Second opinion : An introduction to health sociology [Internet]. Melbourne, AUSTRALIA: Oxford University Press; [5-22]. Available from: http://ebookcentral.proquest.com/lib/monash/detail.action?docID=1986008

Unravelling Complexity in Health

HEALTH & MEDICINE

THEME II:POPULATION, SOCIETY HEALTH AND ILLNESS
Med1100/1200 Semester 1

JEFFREY CHEAH SCHOOL OF MEDICINE & HEALTH SCIENCES

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