Seminar Review

Social Medicine with Medical Ethics

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Department of “Social Medicine and Public Health”

download the presentation from https://tinyurl.com/social-med-class-15

Topic 1 — Social Medicine: Definition, History, Methods

Topic 1 — Definition and Scope

Social medicine — a branch of medical science studying public health and the social, economic, and environmental determinants that shape health and disease across populations.

Core distinction: focuses on **populations**, not individual patients.

Key historical figures (exam!):

- **Jules Guérin** — coined the term "social medicine"
- **Johann Peter Frank** (1745–1821) — "father" of social medicine; state responsibility for health
- **Rudolf Virchow** — medicine must intervene in political and social life
- **Bernardino Ramazzini** (1633–1714) — "father" of occupational medicine; *De Morbis Artificum*
- **John Snow** (1849) — applied epidemiology; cholera and water supply
- **Alfred Grotjahn** (1920) — first dept. of social medicine, Berlin

Topic 1 — Objectives and Methods

5 objectives of social medicine:

1. Study population health and its determinants
2. Develop and implement health policy
3. Health management (organization, financing, quality)
4. Health education and promotion
5. Economic analysis of healthcare (cost-effectiveness)

Methods: (7) - Sociological, Epidemiological, Statistical, Experimental, Historical, Mathematical modeling, Economical.

Topic 2 — Social Etiology, Prophylaxis, Therapy, Rehabilitation

Topic 2 — Core Concepts

Social etiology — study of the social, economic, and environmental causes of disease; goes beyond biological agents to examine conditions of life, work, and social inequality as pathogenic forces.

Social prophylaxis — prevention of disease through social measures: legislation, environmental improvement, health promotion, socioeconomic policy.

Social therapy — treatment approach addressing not only the disease but the social determinants sustaining it; integrates medical care with social support, rehabilitation, and lifestyle modification.

Social rehabilitation — restoration of the individual's social functioning, occupational capacity, and integration into community life following illness or disability.

Exam tip: Know definitions precisely and distinguish the four concepts — examiners ask for all four with brief explanations.

Topic 3 — Social Factors of Health and Disease

Topic 3 — Classification of Social Factors

Basic aspects of human health: somatic, psychological, social.

Social factors of health and disease — classification:

- Personal characteristics
- Family and household conditions
- Occupational factors
- Social and physical environment
- Socioeconomic, political factors (healthcare system access, organization, quality)

Mechanism of influence: Social factors act through **proximal** (direct physiological) and **distal** (indirect, through intermediate variables) pathways.

Social determinants of health (SDH) — conditions in which people are born, grow, live, work, and age.

Topic 4 — Individual Health: Criteria, Classifications

Topic 4 — Individual Health

WHO definition of health (1948): "A state of complete physical, mental and social well-being, not merely the absence of disease or infirmity."

Criteria for health (individual level):

- Absence of disease signs and symptoms
- Normal functional parameters (vital signs, laboratory values)
- Adequate physical and mental performance
- Social functioning and adaptation

Criteria for disease: subjective complaints, objective clinical findings, laboratory/instrumental deviations, functional impairment.

Health classifications:

- Dispensary groups (see Topic 42)
- Sociological health types

Topic 5 — Group and Public Health: Definition, Indicators

Topic 5 — Group and Public Health

Group health — health status of a defined population subgroup (women, men, elderly).

Public health — the collective health of a nation or large population, assessed through standardized population-level indicators.

Indicators of public health:

- Demographic indicators (birth rate, mortality rate, life expectancy)
- Morbidity indicators (incidence, prevalence, disability)
- Physical development indicators (height, weight, BMI norms)

Factors affecting public health: socioeconomic conditions, biological factors, environmental factors, healthcare system quality, lifestyle behaviors.

Trends: ageing populations, rising NCDs, persistent health inequalities, and pandemic-driven reversals in life expectancy gains.

Topic 6 — Health Determinants and Health Indicators

Topic 6 — Health Determinants

European framework: Ten key health determinants (interconnected):

- **Social gradient** — lower socioeconomic position predicts worse health and shorter life expectancy
- **Chronic stress** — sustained neuroendocrine strain increases cardiovascular, metabolic, and mental disorders
- **Early life conditions** — prenatal and childhood exposures shape lifelong health trajectories
- **Social exclusion** — isolation and marginalization increase risk and reduce access to resources
- **Work** — physical and psychosocial work environments strongly affect adult health
- **Unemployment** — job loss/insecurity increases morbidity and premature mortality
- **Social support** — strong networks buffer stress and improve resilience and outcomes
- **Addiction** — tobacco, alcohol, and drug use are socially patterned major risk pathways
- **Nutrition** — food quality and affordability drive obesity, metabolic disease, and NCD burden
- **Transport** — mobility systems influence activity, pollution/noise exposure, and injury risk

Topic 6 — Health Indicators

Requirements of a good indicator: validity, reliability, sensitivity, specificity, measurability, availability of data.

Classification of health indicators:

- By level: individual / group / public
- By method: objective / subjective
- By specificity: specific / nonspecific

Types:

- **Mortality** (death rate, infant mortality, life expectancy)
- **Morbidity** (incidence, prevalence)
- **Disability** (YLD, DALYs)
- **Physical development**
- **Environmental** (pollution, water quality)
- **Socioeconomic** (GDP, literacy, housing)
- **Health policy** (% GDP on health)
- **Quality of life** (composite measures)

Topic 7 — Medical Demography: History, Classification, Demographic Transition

Topic 7 — Medical Demography

- **Medical demography** — study of population structure, dynamics, and health-relevant characteristics, including birth, death, migration, age structure, and their health implications.
- **Classifications of demography:**
  - **Static demography** — population at a point in time (census-based); studies size, structure, distribution
  - **Dynamic demography** — changes over time; studies vital events (births, deaths, migrations)
- **Demographic Transition Model** (4 stages):

1. **Pre-industrial**: high birth rate + high death rate → slow growth
2. **Early industrial**: high birth rate + falling death rate → rapid growth
3. **Late industrial**: falling birth rate + low death rate → slowing growth
4. **Post-industrial**: low birth rate + low death rate → stable/declining population

Some models add Stage 5: sub-replacement fertility, population decline (applicable to Bulgaria).

Topic 8 — Demographic Policy and Family Planning

Topic 8 — Demographic Policy and Family Planning

- **Demographic policy** — state measures aimed at influencing population size, growth rate, and age-sex structure in line with socioeconomic objectives.
- Types: **pro-natalist** (incentivize births) / **anti-natalist** (limit births) / **neutral**.
  - Bulgaria: pro-natalist orientation — financial incentives for childbirth, maternity leave provisions, child allowances.
- **Family planning** (human right) -enables individuals and couples to achieve desired number of children and spacing of births through contraception, infertility treatment, and reproductive health services.
- Medical aspects: contraception counselling, preconception care, prenatal screening, management of infertility.
- Social aspects: education, access to services, elimination of gender-based barriers.

Exam tip: Distinguish demographic policy (state-level) from family planning (individual/couple level).

Topic 9 — Population Dynamics: Migration

Topic 9 — Migration: Types and Health Aspects

- **Migration** — movement of persons across geographic or administrative boundaries, resulting in change of usual residence.
- **Classification:**
  - Internal (within country) vs. external (between countries)
  - Internal migration
    - Temporary (seasonal, daily commuting)
    - Permanent (urbanization, depopulation)
- **Health aspects of migration:**
  - "Healthy migrant effect" — migrants initially healthier than host population (selection bias)
  - Acculturation and health erosion over time
  - Infectious disease transmission and importation
  - Mental health burden (separation, discrimination, uncertainty)
  - Barriers to healthcare access (language, legal status, insurance)
  - Occupational hazards in migrant workers

Topic 10 — Natural and Vital Events: Indicators

Topic 10 — Natural Movement Indicators

Natural movement of population — births and deaths (excludes migration).

Key indicators:

Crude Birth Rate $= \left(\frac{L}{P}\right) \times 1000$ — live births per 1,000 population

Crude Death Rate $= \left(\frac{D}{P}\right) \times 1000$ — deaths per 1,000 population

Natural Growth Rate $= \text{CBR} - \text{CDR}$ (per 1,000)

Total Fertility Rate (TFR) — avg. children per woman over reproductive life; replacement level = **2.1**

General Fertility Rate $= \frac{L}{P_f} \times 1000$ — live births per 1,000 women aged 15–49

Life Expectancy at Birth (e_0) — avg. years expected to live from birth (basis: life tables)

Exam tip: Bulgaria has: CBR ≈ 8–9‰, CDR ≈ 15‰, TFR ≈ 1.5 — i.e., negative natural growth, ageing population.

Topic 11 — Birth and Mortality Factors, Causes of Death, Registration

Topic 11 — Factors and Registration

- **Factors influencing birth rate:** age structure (proportion of women of reproductive age), socioeconomic status, education (especially women's), urbanization, cultural/religious norms, contraception access, state policy.
- **Factors influencing mortality:** age, sex, socioeconomic status, healthcare access, lifestyle, environmental conditions.
- **Causes of death (leading — Bulgaria):** cardiovascular diseases (>60%), malignant neoplasms, respiratory diseases, external causes, digestive diseases.
- **Death registration:** Medical death notification (**съобщение за смърт**) — issued by attending physician or pathologist; records **underlying cause**, **immediate cause**, and contributing conditions per ICD rules.
- **Underlying cause of death** (ICD definition): disease or injury which initiated the train of morbid events leading directly to death.

Topic 11 — Mortality Indicators

$$\text{Age-specific death rate} = \frac{D_x}{P_x} \times 1000$$

Standardized death rate — adjusted for age structure to allow comparison

$$\text{Cause-specific death rate} = \frac{D_{\text{cause}}}{P} \times 100,000$$

$$\text{Case-fatality rate} = \frac{\text{deaths from disease}}{\text{cases of disease}} \times 100$$

$$\text{Proportional mortality ratio (PMR)} = \frac{D_{\text{cause}}}{D_{\text{total}}} \times 100$$

Exam tip: Distinguish crude rate (unadjusted) from standardized rate (comparable). Proportional mortality ratio is NOT a rate — it is a proportion of deaths due to a specific cause.

Topic 12 — Infant Mortality

Topic 12 — Infant Mortality

- **Infant mortality rate (IMR):** $\text{IMR} = \frac{\text{Deaths <1 year}}{\text{Live births}} \times 1000$
  - **Perinatal mortality rate:** deaths 28 wks gestation – 7 days after birth per 1,000 births.
  - **Neonatal mortality:** deaths 0–27 days (early: 0–6 days; late: 7–27 days).
  - **Post-neonatal mortality:** 28 days – 11 months.
- **Causes:** prematurity/low birth weight, congenital anomalies, perinatal asphyxia, infections (post-neonatal dominant).
- **Medico-social prophylaxis:** antenatal care (≥10 visits), adequate nutrition, reduction of teen pregnancy, smoking cessation, neonatal screening, vaccination, breastfeeding promotion.
- **Dynamics:** IMR is an international comparator of population health and healthcare quality. Bulgaria's IMR ≈ 5–6‰ (significant reduction from >20‰ in 1990s).

Exam tip: IMR is the most sensitive composite indicator of social and healthcare conditions.

Topic 13 — Physical Development and Acceleration

Topic 13 — Physical Development

- **Physical development** — totality of morphological and functional properties of an organism at a given age, reflecting the impact of biological and social factors.
- **Assessment methods:** anthropometric measurements (height, weight, chest circumference, BMI); somatoscopy; physiometric methods (muscle strength, lung capacity).
- **Standards:** centile (percentile) tables, deviation scores (Z-scores, σ-deviations), regression tables.
- **Acceleration** — tendency toward earlier biological maturation and increased physical dimensions in successive generations; observed since the 19th century; attributed to improved nutrition, urbanization, reduced infectious disease burden, and mixed biological effects.
- **Retardation** — opposite trend (less common); may signal nutritional deficiency, social deprivation.

Exam tip: Acceleration affects puberty onset, school readiness norms, and population reference standards — know both the definition and causes.

Topic 14 — Risk Factors, Causality, Bradford Hill's Criteria

Topic 14 — Risk Factors and Causality

- **Risk factor** — characteristic or condition associated with increased probability of disease; association ≠ causation.
- **Classification of risk factors:**
  - **Modifiable** (smoking, diet) vs. **non-modifiable** (genetics, age, sex)
  - **Behavioral** vs. **environmental**
  - **Proximal** (direct pathophysiological link) vs. **distal** (indirect, via intermediates)
  - **Primary** (direct causal) vs. **secondary** (mediated through primary)
- **Causality frameworks:**
  - Koch's postulates (infectious disease)
  - Evans' unified postulates (1976) — extended to non-infectious conditions
  - **Bradford Hill's viewpoints** (1965) — most used in chronic disease epidemiology

Topic 14 — Bradford Hill's 9 Criteria (1965)

1. **Strength of association** — stronger RR/OR → more likely causal
2. **Consistency** — repeated across settings, populations, methods
3. **Specificity** — one exposure → one disease (supportive but not required)
4. **Temporality** — **cause must precede effect — ONLY obligatory criterion**
5. **Biological gradient** — dose-response relationship
6. **Plausibility** — biologically coherent mechanism
7. **Coherence** — consistent with existing knowledge
8. **Experimental evidence** — manipulation of exposure changes disease occurrence
9. **Analogy** — similar exposures cause similar diseases (weakest criterion)

Exam tip: Temporality is the ONLY non-negotiable criterion. All others are supportive — Hill called them "viewpoints," not criteria.

Topic 15 — Measurement of Disease and Exposure. Risk Assessment

Topic 15 — Disease Measurement

- **Risk** — probability of disease in a defined population over a specified period.
- **Absolute Risk (AR)** $= \frac{\text{cases}}{\text{population at risk}}$
- **Relative Risk (RR)** $= \frac{\text{AR(exposed)}}{\text{AR(unexposed)}}$ — used in cohort studies
- **Odds Ratio (OR)** $= \frac{\frac{a}{b}}{\frac{c}{d}}$ — used in case-control studies; approximates RR when disease is rare
- **Attributable Risk (AR%)** $= \frac{\mathbb{R}-1}{\mathbb{R}} \times 100$ — proportion of disease attributable to exposure
- **Population Attributable Risk (PAR)** $= \text{AR} \times \text{prevalence of exposure}$
- **Exposure measurement:** questionnaires, clinical records, biomarkers, environmental monitoring.
- **Risk assessment steps (4):** hazard identification → dose-response assessment → exposure assessment → risk characterization.

Exam tip: Know when to use RR vs. OR — RR requires follow-up of exposed/unexposed groups (cohort); OR is used in case-control.

Topic 16 — Incidence, Prevalence, Morbidity Methods, ICD

Topic 16 — Incidence and Prevalence

- **Incidence** — new cases arising in a population at risk during a defined period.
- $\text{Incidence rate} = \frac{\text{new cases}}{\text{population at risk}} \times 10^n$
- **Prevalence** — all existing cases (new + old) at a point in time (point prevalence) or during a period (period prevalence).
- $\text{Prevalence} \approx \text{Incidence} \times \text{Duration}$ $(P \approx I \times D)$
- Chronic conditions: high prevalence relative to incidence. Acute conditions: low prevalence despite potentially high incidence.
- **Methods of collecting morbidity data:**
  - Passive (routine): disease registration, outpatient/inpatient records, dispensary records, death certificates
  - Active: screening programs, health surveys, case-finding
- **ICD** — International Classification of Diseases (WHO); current: ICD-10 (Bulgaria, mandatory from 2004 via Regulation 42); ICD-11 adopted internationally from 2022.
  - ICD-10: alphanumeric coding, 22 chapters, >70,000 codes.

Topic 17 — Epidemiology: Definition, Tasks, Methods. Natural History

Topic 17 — Epidemiology

- **Definition**: “The study of the distribution (when, who, what, where) and determinants (how, why) of health-related states or events in specified populations, and the application of this study to the control of health problems.”
- **Tasks:** describe disease distribution; identify determinants; evaluate interventions; inform policy.
- **Methods:**
  - **Descriptive epidemiology** — Generates hypotheses.
  - **Analytical epidemiology** — tests hypotheses about determinants. Includes observational and experimental designs.
  - **Experimental epidemiology** — tests interventions (e.g., RCTs).
- **Natural history of disease** (Leavell & Clark model):
  - Pre-pathogenic phase (exposure, susceptibility)
  - Subclinical disease (pathological change, no symptoms)
  - Clinical disease (symptoms, signs)
  - Resolution: recovery / disability / death
- **Levels of prevention** align with natural history: primary (pre-pathogenic), secondary (subclinical), tertiary (clinical/resolution).

Topic 18 — Observational Epidemiological Studies

Topic 18 — Observational Studies

Design	Direction	Unit	Measure
Cross-sectional	Simultaneous	Prevalence	OR, PR
Case-control	Retrospective	Disease status	OR
Cohort (prospective)	Forward	Exposure	RR, AR
Cohort (retrospective)	Backward	Exposure (historical)	RR

- **Bias types:** selection bias, information bias (recall, observer), confounding.
- **Confounding** — a third variable associated with both exposure and outcome; control by: randomization, restriction, matching, stratification, multivariate analysis.

Exam tip: Case-control → OR; Cohort → RR. Cross-sectional cannot establish temporality. Ecological fallacy: population-level associations may not apply to individuals.

Topic 19 — Experimental Epidemiological Studies

Topic 19 — Experimental Studies

- **Randomized Controlled Trial (RCT)** — gold standard; participants randomly allocated to intervention or control; prospective; measures causation.
- **Key features of RCT:**
  - Random allocation (eliminates confounding)
  - Blinding: single-blind (participant), double-blind (participant + assessor), triple-blind (+ analyst)
  - Control group (placebo or active comparator)
  - Intention-to-treat analysis
- **Quasi-experimental designs:** no randomization; natural experiments, before-after studies, interrupted time series.
- **Field trials** — preventive interventions in healthy populations.
- **Community trials** — community (not individual) is the unit of randomization.
- **Systematic reviews and meta-analyses** — highest level of evidence; pool data from multiple RCTs.

Topic 20 — Burden of Disease

Topic 20 — Burden of Disease

- **Burden of disease** — total cumulative impact of disease on individuals and society: mortality, morbidity, disability, economic loss, and social disruption.
- **Dimensions:**
  - **Health**: mortality, morbidity, disability, reduced quality of life
  - **Social**: family disruption, social isolation, loss of productivity
  - **Economic**: direct costs (treatment, care) + indirect costs (lost productivity)
- **Key composite measures:** $\mathrm{DALY} = \mathrm{YLL} + \mathrm{YLD}$
  - **YLL** — Years of Life Lost (premature mortality)
  - **YLD** — Years Lived with Disability
  - **QALY** — Quality-Adjusted Life Year (used in health technology assessment)
- Leading causes globally: ischemic heart disease, stroke, lower respiratory infections, COPD, neonatal conditions.

Exam tip: DALY = YLL + YLD. One DALY = one year of healthy life lost.

Topic 21 — Healthcare: Definition, Structure, Principles. Health in All Policies

Topic 21 — Healthcare System

- **Healthcare** — the organized provision of medical services, public health activities, and health promotion to individuals and populations.
- **Structure:** medical establishments + healthcare establishments + healthcare system (macro-level organization, financing, regulation).
- **Factors influencing healthcare:** political system, economic level, cultural norms, population health needs, technological development.
- **Principles of healthcare:** universality, equity, quality, accessibility, efficiency, continuity, comprehensiveness.
- **Health in All Policies (HiAP)** — approach recognizing that health outcomes are shaped by policies outside the health sector (transport, education, agriculture, housing, environment); calls for systematic consideration of health implications across all government policy areas.
- Alma-Ata Declaration (1978): **"Health for All"** through primary health care; reinforced by the Astana Declaration (2018).

Topic 22 — Healthcare Systems: Types, Advantages, Disadvantages

Topic 22 — Healthcare System Models

Model	Advantages	Disadvantages
Beveridge (UK, NHS) — tax-funded, state-run	Universal; equitable; cost control	Waiting lists; bureaucracy; limited choice
Bismarck (Germany, France) — social insurance via payroll	Universal; high quality; pluralistic	High costs; inequality between funds
Private insurance (USA, market-based)	Choice, innovation, shorter waits for insured	High costs, unequal access, underinsurance
Out-of-pocket (no universal coverage)	Market efficiency claims	Extreme inequity; impoverishment

- **Bulgaria's model:** Bismarck-based (social health insurance through NHIF) + Beveridge elements (state-funded care for uninsured).

  Exam tip: Name the model, give an example country, and state at least one key advantage and one disadvantage.

Topic 23 — Health Policy and Reforms in Bulgaria. National Health Strategy

Topic 23 — Bulgarian Health Policy

- **Health reform in Bulgaria** began 1997–2000: transition from Semashko (state-run, Soviet-style) to social health insurance model; privatization of primary care; introduction of NHIF (2000).
- **Key reform elements:**
  - Compulsory health insurance (NHIF operational from 2000)
  - GP as gatekeeping primary care physician
  - Purchaser-provider split
  - Medical Establishments Act and Health Act (2004)
- **National Health Strategy 2030** (current):
  - Healthy living and prevention
  - Accessible and quality healthcare
  - Reduction of health inequalities
  - Digital health and e-health development
  - Maternal and child health improvement
  - Mental health strengthening

Topic 24 — Health Legislation: Health Act

Topic 24 — Health Act (2004)

- **Health Act (2004)** — primary legislative instrument governing public health in Bulgaria.
- **Key areas regulated:**
  - Rights and obligations of citizens regarding health
  - State and municipal health policy
  - Public health protection (communicable disease control, environmental health)
  - Health promotion and disease prevention
  - Emergency medical care organization
  - Control over food, water, and environmental safety
  - Mental health and involuntary treatment conditions
- **Enforcement:** Ministry of Health; Regional Health Inspectorates (RHI); National Centre for Public Health and Analyses (NCPHA).
- **Patient rights under Health Act:** right to informed consent, access to medical records, refusal of treatment, confidentiality, dignity and non-discrimination.

Topic 25 — Health Legislation: Medical Establishments Act

Topic 25 — Medical Establishments Act (1999)

- **Medical Establishments Act** — governs the types, establishment, organization, and operation of medical establishments in Bulgaria.
- **Types of medical establishments (outpatient):**
  - Individual/group medical practice, individual/group dental practice (ambulatory care)
  - Medical / dental center / Diagnostic-consultative center (multispecialty outpatient care)
  - Independent medical/technical laboratory
  - Ambulatories for healthcare professionals

Topic 25 — Medical Establishments Act (1999)

- **Types (inpatient / hospital):**
  - Active treatment hospital (general/specialized)
  - Rehabilitation hospital, Continuous care hospital, Continuous care and rehabilitation hospital
  - Private vs. public ownership
- **Types (other):**
  - Complex oncology center, skin and venereal diseases center, mental health center, hospice, blood transfusion center, emergency medical care center, etc.
- **Regulatory requirements:** registration, licensing, staffing standards, infrastructure requirements.

Exam tip: "Medical establishments" is the correct regulatory term — not "healthcare establishments" or "clinics."

Topic 26 — Health Legislation: Health Insurance Act

Topic 26 — Health Insurance Act

- **Health Insurance Act** (1998, in force 2000) — establishes compulsory and voluntary health insurance in Bulgaria.
- **Two pillars:**
  - **Compulsory health insurance** — universal, mandatory, income-based contributions (8% of insurable income: 4.08% employer + 3.92% employee); administered by NHIF
  - **Voluntary health insurance** — supplementary, premium-based, governed by Insurance Code
- **NHIF structure:** Head Office (Sofia) + 28 Regional Health Insurance Funds
- **Governance:** Supervisory Board (chair: Minister of Health) + Manager + 2 Deputy Managers
- **Key principles (Art. 5):** compulsory participation; solidarity; income-based contributions; guaranteed package; free choice of provider; public openness.
- **Co-payments:** patients pay a co-payment per GP visit, specialist visit, and hospitalization (capped annual amounts; exemptions for certain groups).

Exam tip: Contribution rate = 8% total. 28 RHIFs. NHIF cannot offer voluntary insurance.

Topic 27 — Physician's Liability

Topic 27 — Types of Physician's Liability

- **1. Disciplinary liability** — professional misconduct; sanctions: warning, reprimand, suspension of BMA membership, loss of registration. Imposed by: BMA Ethics Commission / Regional Disciplinary Commission.
- **2. Civil (tort) liability** — financial compensation for damages caused to patient; requires: unlawful act, fault, damage, causality. Governed by Obligations and Contracts Act.
- **3. Administrative liability** — violation of public law norms (e.g., Health Act, MEA); sanction: administrative fine. Imposed by: Regional Health Inspectorate, other administrative bodies.
- **4. Criminal liability** — intentional or negligent causing of bodily harm or death; governed by the Penal Code. Example: medical negligence causing death (Art. 123 PC).
- **Medical standard of care:** duty to act in accordance with established medical standards and guidelines.
- **Informed consent** — prerequisite for all medical interventions; must be voluntary, informed, and competent; documented.

Exam tip: Four types of liability — know each body that imposes it and what triggers it.

Topic 28 — International Collaboration. WHO

Topic 28 — WHO: Structure and Programs

- **WHO** — World Health Organization; specialized UN agency for international health; founded 1948; HQ Geneva.
- **Structure:** World Health Assembly (WHA, supreme body; annual; 194 member states) → Executive Board (34 members; annual ×2) → Secretariat (Director-General + staff); 6 regional offices (EURO — Copenhagen for Bulgaria).
- **Key WHO programs/frameworks:**
  - International Health Regulations (IHR 2005) — binding obligations for disease surveillance and reporting
  - Global Action Plan for Prevention and Control of NCDs 2013–2030
  - Health For All / Sustainable Development Goals (SDG 3)
  - FCTC (Framework Convention on Tobacco Control)
  - Essential Medicines Program
  - Global Immunization Agenda 2030
- **WHO functions:** normative (guidelines, classifications, ICD), surveillance (GBD, GLASS), technical assistance, emergency response (PHEIC declarations).

Topic 29 — European Union Health Policy

Topic 29 — EU Health Policy

- **Treaty basis:** Article 168 TFEU — EU complements national health policies; health systems remain member state competence.
- **EU health priorities:**
  - Cross-border healthcare (Directive 2011/24/EU — patient mobility)
  - Communicable disease surveillance (ECDC — European Centre for Disease Prevention and Control, Stockholm)
  - Medicines regulation (EMA — European Medicines Agency, Amsterdam)
  - Health technology assessment (HTA Regulation 2021)
  - One Health approach (human, animal, environmental health)
  - Cancer Mission (Europe's Beating Cancer Plan)
  - Mental health strategy
- **EU4Health Programme** (2021–2027) — post-COVID health investment framework; priorities: crisis preparedness, NCDs prevention, medicines availability, digital health.
- **Relevance for Bulgaria:** cross-border patient rights, ECDC epidemic alerts, EMA drug approval, structural funds for health infrastructure.

Topic 30 — Health Culture, Health Behaviour, NGOs

Topic 30 — Health Culture and Behaviour

- **Health culture** — knowledge, attitudes, values, and behavioural patterns related to health; encompasses the ability to obtain, understand, and use health information effectively (health literacy).
- **Health behavior** — actions undertaken to maintain or improve health (protective) or actions that damage health (risk behaviors).
- **Steps for developing health culture:**
  - Awareness of health information
  - Understanding and assessment
  - Decision-making
  - Adoption of health behaviors
  - Maintenance of healthy lifestyle
- **Humanitarian NGOs in health:** Médecins Sans Frontières, Red Cross / Red Crescent, WHO partnerships; role in humanitarian crises, refugee health, advocacy, and service delivery in underserved populations.
- **Health literacy** — a key determinant of health outcomes; inadequate literacy linked to worse chronic disease management, higher hospitalization rates, and reduced preventive care uptake.

Topic 31 — Health Education

Topic 31 — Health Education

- **Health education** — planned process to promote health knowledge, positive attitudes, and health-protective behaviors in individuals and communities.
- **Basic principles:** scientific basis; accessibility; relevance to target group; activity of participants; comprehensiveness; systematicity.
- **Methods:**
  - **Individual** — counselling, motivational interviewing
  - **Group** — lectures, seminars, discussion groups, role-play
  - **Mass** — media campaigns, social media, health days
- **Forms:** verbal (lecture, conversation), written (leaflets, posters, articles), visual (video, demonstration), combined.
- **Health promotion** (Ottawa Charter, 1986) — broader concept; builds healthy public policy, creates supportive environments, strengthens community action, develops personal skills, reorients health services.
- Distinction: health education = information/attitude change; health promotion = policy/environment + education.

Topic 32 — Sociological Research: Questionnaire and Observation

Topic 32 — Questionnaire and Observation

- **Sociological research** — systematic study of social phenomena, opinions, and behaviours using standardized methods.
- **Questionnaire (survey):**
  - Most widely used tool; written; self-administered or interviewer-administered
  - Types of questions: **closed** (fixed responses — easier to analyze), **open** (free text — richer data, harder to code), **semi-closed**
  - Requirements: clarity, neutrality, logical sequence, valid and reliable
  - Types of questionnaires: direct group/ individual, postal, indirect (via third party), online
  - Pilot testing before deployment
- **Observation:**
  - **Structured** (predetermined observation schedule) vs. **unstructured**
  - **Participant** (observer joins group) vs. **non-participant**
  - **Overt** (known to subjects) vs. **covert**
  - Advantages: captures actual behavior; disadvantages: observer effect (Hawthorne effect), resource-intensive

Topic 33 — Sociological Research: Interview and Document Review

Topic 33 — Interview and Document Review

- **Interview:**
  - **Structured** — fixed questions, fixed sequence; closer to questionnaire; high comparability
  - **Semi-structured** — fixed topics, flexible questions; balance of depth and comparability
  - **Unstructured (in-depth)** — open conversation; rich qualitative data; low comparability
  - **Focus group** — group discussion (6–10 participants); generates consensus and divergence; useful for exploring attitudes
- Advantages over questionnaire: higher response rate, clarification possible, access to illiterate populations. Disadvantage: interviewer bias, time/cost.
- **Document review (analysis):**
  - Primary documents: medical records, legislation, administrative data (documents created for the research purpose)
  - Secondary documents: reports, publications, media (documents created for other purposes)
  - Systematic/qualitative content analysis
  - Advantages: non-reactive, historical access; Disadvantages: incomplete records, selection bias

Exam tip: Three interview types + focus group. Documents = primary vs. secondary.

Topic 34 — Social History of the Patient. Family Anamnesis

Topic 34 — Social History and Family Anamnesis

- **Social history of the patient** — systematized information about the patient's social conditions relevant to health: occupation, working conditions, education, income, housing, family structure, social support, habits (smoking, alcohol, diet, physical activity), migration history.
- Integral to the clinical assessment; informs diagnosis, treatment adherence, and prognosis.
- **Family anamnesis:**
  - Hereditary diseases and conditions (first-degree relatives)
  - Family history of chronic diseases (CVD, diabetes, cancer, mental illness)
  - Genetic risk factors; consanguinity
  - Family structure and function (support, stress, dynamics)
- **Family genogram** — diagrammatic representation of family structure and health history across generations; standard tool in family medicine.
- **Significance:** identifies genetic predisposition; informs preventive counselling; guides genetic referral decisions.

Topic 35 — Family Health Care. Problem Families

Topic 35 — Family Health Care and Problem Families

- **Family health care** — healthcare delivered within the context of the family unit, recognizing the family as the primary social unit influencing health and illness.
- **The GP's role in family health:** continuity of care, coordination, advocacy, preventive counselling, mental health support.
- **Problem families** — families facing specific social, structural, or health challenges requiring additional medical and social attention:
  - **Single-parent families** — higher social and economic vulnerability
  - **Cohabitation / unmarried couples** — legal and insurance implications
  - **Divorced families** — emotional impact on children; custody and parenting arrangements
  - **Families with chronically ill members** — caregiver burden, financial strain, social isolation
  - **Families with terminally ill members** — palliative care needs, anticipatory grief, end-of-life planning
- Physician role: identify problems early, coordinate social support, maintain neutrality, respect autonomy, involve multidisciplinary teams.

Topic 36 — Physician's Role in Family Planning and Congenital Disease Prevention

Topic 36 — Family Planning and Screening

-**Physician's role in family planning:**

- Contraception counselling (method selection, side effects, contraindications)
- Management of unintended pregnancy
- Preconception care: folic acid, control of chronic diseases, genetic counselling
- **Prevention of congenital diseases:**
  - Primary prevention: avoidance of teratogens, rubella vaccination, iodine supplementation, folic acid periconceptionally
  - Secondary prevention (screening):
- **Prenatal screening:**
  - First trimester: NT ultrasound + serum PAPP-A + β-hCG (combined screening for trisomies)
  - Second trimester: quadruple test (AFP, hCG, estriol, inhibin A); anomaly scan (18–20 wks)
  - Diagnostic: amniocentesis, chorionic villus sampling
- **Neonatal (postnatal) screening:**
  - Heel prick blood test: PKU, congenital hypothyroidism, galactosemia, cystic fibrosis (expanded in Bulgaria)
  - Newborn hearing screening

Topic 37 — Occupational Medicine: Definition, Principles, Organization

Topic 37 — Occupational Medicine

- **Occupational medicine** — branch of medicine concerned with the prevention, diagnosis, and management of work-related illness and injury, and the promotion of health and work capacity in working populations.
- **Key principles:**
  - Primary prevention of occupational diseases (hazard elimination, substitution)
  - Secondary prevention (health surveillance, early detection)
  - Tertiary prevention (rehabilitation, return to work)
  - Preventive orientation; risk assessment; multidisciplinary approach
- **Organization in Bulgaria:**
  - **Occupational Health Service (служба по трудова медицина, СТМ)** — mandatory for all employers; multidisciplinary team (occupational medicine physician, hygienic engineer, etc.); responsibilities: workplace risk assessment, health surveillance, preventive examinations, advisory functions
  - Pre-employment and periodic medical examinations (Regulation on periodic medical examinations of workers)
  - National Centre for Public Health and Analyses (NCPHA) — occupational disease registry
  - **HSWA Act** — Health and Safety at Work Act (ЗЗБУТ) — primary legislation

Exam tip: СТМ (Occupational Health Service) — mandatory for ALL employers; know its functions.

Topic 38 — Temporary Incapacity: Expert Evaluation and Indicators

Topic 38 — Temporary Incapacity: Hierarchy

- **Temporary incapacity for work** — insured person temporarily unable to perform usual duties due to illness, injury, or other health reason. Certified by **sick leave certificate**.

Hierarchy of certification authority:

Body	Authority
Attending physician	Up to 14 consecutive days; max 40 days/year unilaterally
Emergency physician	Up to 3 days
Medical Consultative Commission (MCC)	Up to 30 calendar days continuous; no more than 180 days in past 2 years
TEMC	Extensions up to 2 months 3 times

Topic 38 — Indicators of Temporary Incapacity

- $\text{Frequency} = \dfrac{\text{Total cases of incapacity}}{\text{Number of insured}} \times 100$
- $\text{Severity (burden)} = \dfrac{\text{Total incapacity days}}{\text{Number of insured}} \times 100$
- $\text{Average duration} = \dfrac{\text{Total days}}{\text{Total cases}}$
- **Occupational reassignment**: attending physician (≤1 month); MCC (≤6 months); TEMC (>50% permanent reduction).

Topic 39 — Permanent Incapacity: TEMC

Topic 39 — Permanent Incapacity and TEMC

- **Permanent incapacity for work** — loss of work capacity that cannot be expected to recover within the timeframes applicable to temporary incapacity.
- **TEMC (Territorial Expert Medical Commission):**
  - Regional body; determines type and degree of permanent disability
  - Assesses occupational disease causation
  - Resolves disputes over MCC decisions
  - Periodically re-examines registered disabled persons
  - Decisions may be appealed to **National Expert Medical Commission (NEMC)**; NEMC decisions appealable to administrative court
- **Degrees of permanent disability:**
  - Over 50% reduction: significant limitation of work capacity; eligible for disability pension (3 levels based on severity)
  - Under 50%: partial limitation; may require occupational reassignment
- **Occupational disease determination** requires specialist in occupational medicine; triggers employer liability and compensation rights.

Topic 40 — Primary Health Care. GP Functions. Hospital at Home

Topic 40 — Primary Health Care

- **Primary health care (PHC)** — first-contact, continuous, comprehensive, and coordinated care provided in the community setting.
- **GP functions in Bulgaria:**
  - Registration and provision of care to enrolled patients
  - Sick leave certification (up to 14 days / 40 days per year)
  - Referral to specialists and hospitals
  - Preventive examinations (annual check-ups funded by NHIF)
  - Dispensarization (chronic disease monitoring)
  - Health promotion and education
  - Home visits
  - Vaccinations per national immunization schedule
- **Gatekeeping role**
- **Hospital at Home (домашен болничен лекар):**
  - Active medical supervision of patients at home who require hospital-level monitoring
  - Conditions: patient stability, adequate home environment, caregiver availability

Topic 41 — Preventive Medicine. Levels of Prophylaxis. Health Promotion

Topic 41 — Prevention Levels

Level	Target	Examples
Primary	Healthy population; eliminate risk	Vaccination, healthy diet, smoking cessation, seat belts
Secondary	Asymptomatic disease; early detection	Screening (mammography, cervical cytology, BP measurement), dispensarization
Tertiary	Established disease; limit disability	Rehabilitation, disease management, preventing complications

- **Health promotion** (Ottawa Charter 1986): "the process of enabling people to increase control over, and to improve, their health." Five action areas: build healthy public policy; create supportive environments; strengthen community action; develop personal skills; reorient health services.

Exam tip: Know all three levels with concrete examples. Secondary prevention = screening. Tertiary = rehabilitation.

Topic 42 — Dispensary Method: Types, Groups, Indicators

Topic 42 — Dispensary Method

- **Dispensary method** — comprehensive approach integrating active case-finding, systematic monitoring, and rehabilitation; transforms healthcare from episodic to continuous surveillance.
- **Dispensarization groups (patient groups):**
  - Group I: healthy individuals (preventive dispensarization)
  - Group II: risk groups without manifest disease
  - Group III: patients with chronic disease requiring active management
- **Key regulatory provision:** minimum 15 minutes per dispensary visit. Voluntary (with exceptions for public health/criminal risk). Cannot be simultaneously registered at two facilities for same condition.
- **Annual preventive coverage target:** ≥45% of enrolled adult population.
- Establishments: Complex Oncology Centers, Skin and Venereal Diseases Centers, Mental Health Centers, etc. (not just GP practices).

Topic 42 — Dispensarization Indicators

Performance indicators:

$$\text{Timeliness (\%)} = \frac{\text{First-time dispensarized}}{\text{First-time diagnoses warranting surveillance}} \times 100$$

$$\text{Systematic observation (\%)} = \frac{\text{Receiving scheduled surveillance}}{\text{Total enrolled}} \times 100$$

Effectiveness indicators:

$$\text{Recovery rate} = \frac{\text{Disease-resolved}}{\text{Total dispensarized}}$$

$$\text{Improvement rate} = \frac{\text{Clinically improved}}{\text{Total dispensarized}}$$

$$\text{Stability rate} = \frac{\text{Same group, no deterioration}}{\text{Total dispensarized}}$$

$$\text{Deterioration rate} = \frac{\text{Progressed to higher group}}{\text{Total dispensarized}}$$

Clinical targets (exam!): Diabetes: HbA1c < 7.0%; BP < 140/85 mm/Hg. CVD: BP < 145/90; LDL < 1.8 mmol/l (IHD) or < 2.6 mmol/l (other risk groups).

Topic 43 — Hospital Care: Functions, Structure, Indicators

Topic 43 — Hospital Care

- **Functions of hospitals:** diagnosis and treatment of acute and complex conditions; emergency care; specialist consultations; teaching and training; research; rehabilitation initiation.
- **Internal hospital structure:** clinical departments → wards → nursing units; diagnostic services (laboratory, imaging); surgical block; ICU; emergency department; administrative services; pharmacy.
- **Types of hospital beds:**
  - **Active treatment beds** (acute care)
  - **Rehabilitation beds**
  - **Psychiatric beds**
  - **Long-term care beds**

Topic 43 — Hospital Care

$$\text{Bed occupancy rate} = \frac{\text{Patient-days}}{\text{Beds} \times \text{Days in period}} \times 100 \quad (\text{optimal} \approx 85\%)$$

$$\text{Average length of stay (ALOS)} = \frac{\text{Total patient-days}}{\text{Total discharges}}$$

$$\text{Bed turnover rate} = \frac{\text{Discharges}}{\text{Average beds}}$$

$$\text{Case-fatality rate} = \frac{\text{In-hospital deaths}}{\text{Total admissions}} \times 100$$

Topic 44 — Hospitalization: Factors, Indications, Patient Rights, Indicators

Topic 44 — Hospitalization

- **Factors influencing hospitalization:** severity of illness; need for intensive monitoring; surgical/procedural requirements; social factors (inadequate home support); healthcare system structure and bed availability.
- **Indications:** medical, social and combined
- **Rights of hospitalized patients (Health Act):** To be visited by relatives and referring physician; to receive information about their health status and treatment; to participate in decisions; to receive care with respect and dignity; to confidentiality; to complain about care received.
- **Obligations:** comply with facility rules; provide accurate health history; not endanger other patients or staff; not to smoke, to obey treatment plans and hospital regime.

Topic 44 — Hospitalization

$$\text{Hospitalization rate} = \frac{\text{Admissions}}{\text{Population}} \times 1000$$

$$\text{Emergency hospitalization rate} = \frac{\text{Emergency admissions}}{\text{Total admissions}} \times 100$$

$$\text{Repeated hospitalization rate} = \frac{\text{Readmissions within 30 days}}{\text{Total discharges}} \times 100$$

Topic 45 — Quality of Hospital Care. Patient Experience. Discharge Planning

Topic 45 — Quality and Discharge

Dimensions of hospital quality (Donabedian model):

- **Structure** — physical resources, staffing, equipment, organization
- **Process** — clinical procedures, protocols, teamwork, communication
- **Outcome** — mortality, complications, patient satisfaction, functional recovery
- **Quality indicators:** adverse event rate; hospital-acquired infection rate; 30-day readmission rate; ALOS; patient satisfaction scores.
- **Patient and family experience of hospitalization:** information provision; communication with healthcare team; pain management; respect for dignity; involvement in decisions; discharge preparation.
- **Discharge planning:**
  - Should begin at admission
  - Includes: medication reconciliation, follow-up appointment scheduling, community service referrals, patient/family education
  - Reduces unplanned readmissions
  - Written discharge summary essential; copies to GP and patient
  - Social and home care needs assessed prior to discharge

Topic 46 — Medico-Social Issues of Women and Maternal Care. NHIF Maternal Programme

Topic 46 — Maternal Health

- **Medico-social issues of women's health:** reproductive health; domestic violence; occupational hazards during pregnancy; socioeconomic determinants of maternal outcomes.
- **Maternal mortality ratio (MMR):** deaths per 100,000 live births; leading causes: haemorrhage, hypertensive disorders, sepsis, unsafe abortion.
- **NHIF Maternal Health Programme (Bulgaria):**
  - Funded prenatal visits: minimum 10 antenatal visits covered by NHIF
  - First trimester: clinical exam + first trimester screening (NT + serum markers)
  - Second trimester: anomaly scan + quadruple test
  - Third trimester: monitoring of fetal growth, position, placental function
  - Laboratory tests: blood count, blood group/Rh, TORCH, STI screening, glucose tolerance test
  - Covered: postnatal visit at 4–6 weeks
- **Social aspects:** paid maternity leave (410 days in Bulgaria: 45 days before birth + 365 days after); single mothers; domestic violence screening; social support systems.

Topic 47 — Medico-Social Issues of Childcare. NHIF Child Health Programme

Topic 47 — Child Health

- **Medico-social issues of childcare:** infant mortality; child malnutrition; child abuse and neglect; developmental disabilities; access to paediatric care; immunization coverage.
- **NHIF Child Health Programme:**
  - Preventive examinations at defined developmental milestones: newborn, 1 month, 2 months, 3 months, 6 months, 9 months, 12 months, 18 months, 3 years, school-entry (7 years), periodically thereafter
  - Each visit: growth monitoring, developmental assessment, parental counselling, vaccination status check
  - Additional targeted exams: audiology, ophthalmology (infants), orthopedics (hip ultrasound newborns)
- **Child vaccination schedule (National Immunization Programme):** BCG (newborn), HepB, DTaP-IPV-Hib-HepB, pneumococcal, MMR, varicella, HPV (girls 12 yrs), meningococcal (risk groups).

Topic 48 — Maternal and Child Health: Abortion, Infertility, Special Situations

Topic 48 — Abortion, Infertility, and Special Situations

- **Abortion:** in Bulgaria — legal on request up to 12 weeks; therapeutic (medical indication) up to 20 weeks; must be performed in licensed medical establishment; mandatory counselling.
- Medico-social complications: physical (perforation, infection, haemorrhage); psychological (grief, post-abortion syndrome debate); social (stigma, access barriers for vulnerable women).
- **Infertility:** inability to conceive after 12 months of unprotected intercourse. Causes: male factor (40%), female factor (40%), combined (20%). Treatments: ART (IVF, ICSI); NHIF partial coverage.
- **Single mothers:** increased poverty risk; social support system; child allowances; legal protections.
- **Unwanted children:** psychosocial risk; child protection system; adoption; foster care.
- **Children with chronic diseases:** caregiver burden; school integration; multidisciplinary management.
- **Medical treatment without parental consent:** emergency exception; court authorization in life-threatening situations.
- **Sexual education:** age-appropriate; reduces teen pregnancy and STIs; evidence-based comprehensive programs superior to abstinence-only.

Topic 49 — Adolescent Health: Acceleration, Alcohol, Drugs, Prevention

Topic 49 — Adolescent Health Issues

- **Acceleration and adolescence:** earlier pubertal onset (secular trend); social mismatch between biological maturity and psychological/social readiness; implications for sexual education timing, sport programs, and age-adapted norms.
- **Adolescent alcohol use:**
  - Particularly harmful during brain development (prefrontal cortex maturation until 25 years)
  - Risk factors: peer pressure, family history, social deprivation, school failure
  - Prevention: legal minimum age enforcement, health education, family-based programs
- **Drug use:**
  - Cannabis, alcohol, tobacco — most prevalent
  - Harm reduction vs. abstinence approaches
  - School-based, family-based, and community prevention programs

Topic 49 — Adolescent Health Issues

- **Prevention of common diseases to age 18:**
  - Immunizations (National Immunization Schedule)
  - Dental health (fluoride, regular check-ups)
  - Mental health screening (depression, eating disorders, self-harm)
  - Sexually transmitted infections (condom promotion, HPV vaccine)
  - Scoliosis screening; vision and hearing screening

Exam tip: Acceleration = earlier puberty. Know both biological and social consequences.

Topic 50 — Health Management: Basic Principles. Human Resources

Topic 50 — Health Management Principles

- **Management** — process of planning, organizing, leading, and controlling resources to achieve organizational objectives (reduce entropy in the system, achieving aims with limited resources).
- **Functions of management (Fayol):**
  - **Planning** — setting goals, defining strategies, allocating resources
  - **Organizing** — structuring roles, responsibilities, workflows
  - **Leading / Staffing** — motivating, directing, developing staff
  - **Controlling** — monitoring performance, correcting deviations
- **Healthcare management principles:** patient-centeredness; quality and safety; efficiency; equity; evidence-based decision-making; accountability.
- **Management of human resources in health:**
  - Workforce planning (needs assessment, training pipeline)
  - Recruitment and retention (incentives, working conditions, Maslow's hierarchy of needs)
  - Performance appraisal and professional development

Topic 51 — Health Management: Team, Financial Resources, Organizational Change

Topic 51 — Management Team and Finance

- **Management team:** multidisciplinary; clear roles (manager, deputies, department heads, quality officer); communication structures; decision-making processes; conflict resolution.
- **Leadership styles:** autocratic; democratic/participative; laissez-faire; transformational. Effective healthcare management typically employs situational leadership.
- **Management of financial resources:**
  - Healthcare budget planning (government, insurance, user charges)
  - DRG (Diagnosis-Related Groups) — hospital payment system: fixed payment per admission by diagnosis; incentivizes efficiency
  - FFS (Fee for Service) — payment per activity; incentivizes volume
  - Capitation — fixed payment per enrolled patient; incentivizes prevention
  - Cost-benefit analysis; cost-effectiveness analysis
- **Management of organizational change:**
  - Lewin's model: unfreeze → change → refreeze
  - Kotter's 8-step model for leading change
  - Resistance to change: sources, management strategies
  - Change in context of healthcare reform, digitalization, restructuring

Topic 52 — Public Health Planning, Economy, and Marketing

Topic 52 — Planning, Economy, Marketing

- **Public health planning:**
  - **Strategic planning** — long-term goals, national health strategy
  - **Operational planning** — short-term, resource allocation, program implementation
  - Steps: situation analysis (needs assessment) → goal setting → strategy selection → implementation → evaluation
- **Health economics:**
  - **Cost-benefit analysis** — outcomes monetized; compares costs to monetary benefits
  - **Cost-effectiveness analysis** — cost per health unit gained (e.g., cost per DALY averted, cost per QALY)
  - **Cost-utility analysis** — cost per QALY; preferred in HTA
  - **Cost-minimization analysis** — compares costs when outcomes are equivalent
  - Concepts: opportunity cost, efficiency (allocative / technical), health technology assessment

Topic 52 — Planning, Economy, Marketing

- **Health marketing:**
  - Application of marketing principles to health behavior change and service design
  - Social marketing: uses commercial marketing techniques to promote health behaviors
  - 4 Ps: Product (health behavior), Price (barriers), Place (access), Promotion (communication)
  - Target audience segmentation; formative research; behavior-change campaigns

Exam tip: Know the four economic analyses. Social marketing ≠ social media marketing.