Practical Class 8

Dispensary Method — Types and Patient Groups. Indicators. Occupational Medicine

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Conspectus topics (41) (42) (37)

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Academic Year 2025/2026

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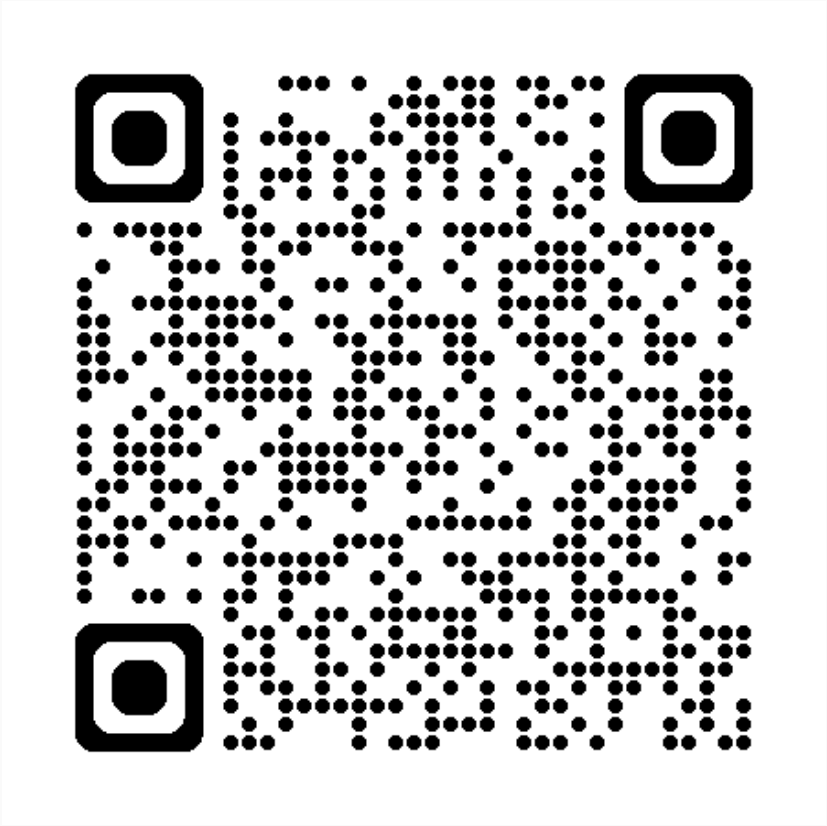
download the presentation from https://tinyurl.com/social-med-class-08

15-minute reading assignment



https://kostadinoff.github.io/learning.html

Group tasks

https://kostadinoff.github.io/tasks.html

Outline

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Dispensary Method — Definition and Types

Definition (42)

The **dispensary method** is an active comprehensive and organizational approach to healthcare that integrates medical, social, and public health activities focused on:

- **Active case finding** — identifying individuals in need of surveillance
- **Systematic monitoring** — scheduled, structured follow-up
- **Rehabilitation** — restoring health and functional capacity

It transforms healthcare from episodic intervention to **continuous surveillance and support** across the full health–disease continuum.

Three Operational Modalities (42)

Type	Target and objective
Preventive dispensarization	Healthy populations at elevated risk — health promotion and primary prevention; pregnant women, children, workers, the elderly
Post-treatment dispensarization	Individuals in recovery following illness — secondary prevention, preventing recurrence and residual impairment
Comprehensive dispensarization	Entire populations simultaneously — combines preventive and post-treatment objectives; the maximal expression of the dispensary philosophy

Methods and Organization

Methodological Components (42)

Dispensarization operates through two principal elements:

1. **Non-specific secondary prevention (medical examinations)**
- **Mass medical examinations** — at school/university entry, employment commencement, driver's licence certification
- **Annual preventive examination** at the general practitioner
- **Targeted examinations** — for individuals with identified risk factors
- **Periodic examinations** — for chronic disease and disability patients

2. **Screening programs** — standardized tests in asymptomatic populations for early disease detection

Screening in Bulgaria — Legal Framework and Programmes

Legal Definition and Regulatory Basis (41)

Under **§ 1, item 6 of the Additional Provisions to the Health Act**, screening is defined as a **targeted preventive examination carried out according to a specific programme** to establish the prevalence of a sign, symptom, or disease among a group of individuals.

Detailed regulation is established by **Ordinance No. 8 of 2016** on preventive examinations and dispensarization.

A screening programme may be conducted only when:

- the target condition constitutes a **significant public health problem**
- **validated diagnostic and treatment methods** exist
- the condition can be detected in a **pre-clinical or early stage**
- the methods used are **safe, applicable, and cost-effective**

National Organized Screening System (41)

Under Art. 17 of Ordinance No. 8/2016, the state **creates and maintains a system for organized screening** of the population, providing monitoring, control, analysis, and reporting.

Component	Description
National Screening Registry (HCP)	Maintained by NCPHA; contains personal data, test results, diagnoses, referrals, and aggregate statistics
Regional coordinators	One coordinator per Regional Health Inspectorate (РЗИ); monitors local implementation
Financing sources	State budget, NHIF budget, national programmes and projects

Active Screening Programmes — Overview (41)

Programme	Scope
NCD Prevention 2021–2025	Oncological, CVD, pulmonary disease, type 2 diabetes screening
National Roma Health Strategy 2021–2030	Mobile units; paediatric, gynaecological, imaging, laboratory screening in underserved areas
HIV/AIDS Prevention & Control 2021–2025	Voluntary confidential HIV, hepatitis B/C, syphilis testing across high-risk groups
Neonatal metabolic screening	PHK, congenital hypothyroidism, CAH, cystic fibrosis, SMA, SCID — all newborns
Neonatal hearing screening	OAE screening before discharge — target coverage ≥ 95%
Prenatal biochemical screening	Trisomy 21, NTDs — 11–13 weeks GA; 17 091 women tested in 2022
NHIF preventive examinations	Adults ≥18 and children 0–18; integrated multi-disease screening

Neonatal Metabolic Screening (41)

Mandatory for all newborns — blood spots collected before discharge from maternity/ neonatal units.

Currently covers **six conditions** in Bulgaria:

Condition	Laboratory	Method
Congenital hypothyroidism	SHATCD Sofia	Dried blood spot
Congenital adrenal hyperplasia	SHATCD Sofia	Dried blood spot
Cystic fibrosis	SHATCD Sofia	Dried blood spot
Phenylketonuria (PKU)	Maichin Dom Sofia	Dried blood spot
Spinal muscular atrophy (SMA)	Maichin Dom Sofia	Dried blood spot
Severe combined immunodeficiency (SCID)	Maichin Dom Sofia	Dried blood spot

Neonatal Hearing Screening (41)

- Method: **otoacoustic emissions (OAE)** — performed before or on the day of discharge
- Premature infants tested at corrected post-conceptual age
- **Informed consent** required from parent or guardian

Coverage data:

Year	National coverage
2020	85.13%
2021	80.44%
2022	87.73%
Target (2030)	≥ 95%

Highest coverage: **Sofia, Plovdiv, Varна**. Lowest: **Vidin, Yambol, Razgrad**.

NHIF-Funded Screening — Adults (≥18 years) (41)

Conducted annually by the GP; integrated into the mandatory preventive examination:

Screening domain	Protocol
Obesity	BMI — annually, all adults ≥18
Mental health	Psychiatric status assessment — annually
Cardiovascular disease	BP + ECG — annually; lipid profile + SCORE ≥40 ♂ / ≥50 ♀ every 5 yr
Type 2 diabetes	FINDRISK questionnaire annually; fasting glucose if score ≥12
Renal/hepatic function	Creatinine, urine, ASAT/ALAT — every 5 yr (age 20–65)
Viral hepatitis B/C	HBsAg + anti-HCV at ages 40, 45, 50, 55, 60
Breast cancer (♀ 30–50)	Manual exam annually; ultrasound every 2 yr
Breast cancer (♀ 50–69)	Mammography every 2 years
Cervical cancer (♀ 30–40)	Pap smear annually; every 3 yr after 2 negatives
Prostate cancer (♂ ≥50)	Total + free PSA every 2 years
Colorectal cancer (risk)	Faecal occult blood test every 2 years

NHIF-Funded Screening — Children (0–18 years) (41)

Conducted by the GP (or paediatrician) under Programme **“Child Healthcare”** (Наредба № 8/2016):

Screening domain	Schedule
Physical development (height/weight)	Monthly < 1 yr → 3-monthly 1–2 yr → 6-monthly 2–7 yr → annually 7–18 yr
Psychomotor development	Monthly < 1 yr → 3-monthly 1–2 yr → 6-monthly 2–3 yr → annually 3–7 yr
Hip dysplasia	Clinical exam at 1 month and 4 months
Urinary tract anomalies	Renal ultrasound at 6 months
Visual acuity	At 6 m, 1, 5 yr; annually 7–18 yr
Intestinal parasites	Annually age 2–7 yr
Blood pressure	Annually 7–18 yr
Lipids + glucose	Single measurement at age 16
Scoliosis/musculoskeletal	Annually 7–18 yr

Healthcare Settings (42)

Dispensarization occurs within diverse institutional settings aligned with disease type:

- **Outpatient medical establishments** — common chronic conditions, risk factor management, continuity of care
- **Hospital medical establishments** — conditions requiring specialist or advanced diagnostic assessment
- **Complex Oncology Centers** — malignant diseases, multidisciplinary cancer care pathways
- **Centers for Mental Health** — psychiatric conditions requiring longitudinal management
- **Centers for Skin and Venereal Diseases** — dermatological and sexually transmitted infections

Key Regulatory Principles (42)

- Dispensarization is **voluntary** and requires informed consent; exceptions apply when illness creates risk of criminal behaviour, danger to others, or public health threat requiring compulsory treatment
- **One provider rule**: no individual may be enrolled for the same condition at multiple facilities simultaneously
- **Minimum examination duration**: 15 minutes — below this threshold, meaningful clinical assessment cannot be assured
- **Documentation**: examination findings, results, and recommendations recorded in approved medical records; patients receive copies for care coordination
- When patients transfer facilities, medical records follow the individual to ensure continuity of surveillance

GP and Specialist Roles (42)

The GP identifying a condition warranting dispensarization is responsible for:

- Detailed patient education regarding disease type and severity, potential complications, monitoring and treatment options, and risks of declining follow-up
- Referral via **Form 3** (consultation) or **Form 7** (specialized dispensary enrolment) when specialist expertise is required

Children under 18: if multiple comorbid conditions fall within the same disease class, the **specialist assumes responsibility** for all conditions in that class

Adults over 18: the **GP retains integrated surveillance**, except for insulin-dependent diabetes and specialist cardiac post-operative follow-up (first year)

When GPs lead adult dispensarization: **1–2 specialist consultations per year** are recommended; patients may exercise a legal right to refuse these in writing

Scheduling Rules (42)

When an individual is enrolled in dispensarization for multiple conditions simultaneously:

- **Examination frequency**: the highest prescribed frequency among all enrolled conditions determines the overall surveillance schedule
- **Diagnostic investigations**: the maximum frequency/count for any specific test applies across all programmes — not an additive total
- **Initial enrolment**: the number of examinations for the first calendar year is calculated **proportionally to the remaining months** of the year

Each GP must publicly post information detailing types and frequencies of preventive examinations for adults over 18

Dispensarization Groups

Five Classification Groups (42)

Group	Status	Includes
I	Healthy	Children < 7 years; active athletes; pregnant women — no objective clinical abnormalities or complaints
II	Practically healthy, elevated risk	Significant risk factors for CVD, type 2 diabetes, malignancy; obesity, physical inactivity, tobacco use
III	Chronic disease — compensated	Mild manifestations, infrequent exacerbations, preserved work capacity
IV	Chronic disease — subcompensated	Moderate functional impairment, frequent exacerbations, periodic intensive intervention
V	Chronic disease — decompensated	Permanent functional disability, continuous medical supervision required

Group II — Risk Factors Monitored (42)

Practically healthy individuals with elevated risk for:

- **Cardiovascular disease** — hypertension, dyslipidaemia, smoking, family history, physical inactivity
- **Type 2 diabetes mellitus** — impaired fasting glucose, obesity, sedentary lifestyle, family history
- **Malignant disease** — cervical cancer, breast cancer, colorectal cancer, prostate cancer (age-/sex-specific risk factors)
- **Obesity** and metabolic syndrome components
- **Tobacco use** — current smokers and those at risk of initiating

The boundary between Group I and Group II represents the central target for **preventive dispensarization**

Disease-Specific Dispensarization

Oncological Disease (42)

Dispensarization occurs **exclusively** in inpatient facilities and Complex Oncology Centers.

Centers provide:

- Active case finding through population screening and early diagnostic evaluation
- Treatment across surgical, radiation, and systemic therapy modalities
- Registration and dispensarization — feeding national cancer registry
- Periodic surveillance extending through survivorship
- Expert and advisory functions for regional healthcare networks
- Clinical research and medicinal product trials
- Health promotion and cancer prevention programmes

Dermatological and Venereal Diseases (42)

Dispensarization conducted in inpatient facilities and **Centers for Skin and Venereal Diseases**.

Centers provide:

- Diagnosis, treatment, and rehabilitation for acute and chronic dermatoses
- Periodic surveillance for conditions requiring long-term monitoring
- STI diagnosis, treatment, and prevention — individual welfare and public health objectives
- Expert activities in sexual health; clinical trials
- Centers may maintain **up to 10 beds** for diagnostic and therapeutic stays
- Medical leadership requires specialization in dermatology and venereal diseases

Mental Health Dispensarization (42)

Oversight by **psychiatrist specialists**; individuals requiring extended observation referred to **Centers for Mental Health**.

Centers provide:

- Emergency psychiatric care for acute crisis presentations
- Diagnosis and treatment across the severity spectrum
- Periodic observation, consultations, and **home care delivery**
- Psychotherapy and psychosocial rehabilitation
- Psychiatric and psychological expert activities (disability assessment, forensic evaluation)
- Clinical trials; mental health promotion at community and policy levels
- Social services addressing housing, income, and other health determinants

Transplantation Follow-Up (42)

All individuals who undergo organ, tissue, or cell transplantation enter **mandatory dispensarization**:

- Surveillance typically conducted within the **institution where transplantation was performed**
- Leverages institutional familiarity with immunosuppression protocols and procedure-specific complications
- Individuals transplanted outside national borders may select a medical institution by submitting a written application to the institutional director
- Lifelong surveillance requirements are recognized as a clinical necessity, not a discretionary service

Dispensarization Indicators

System Performance Indicators (42)

Timeliness of dispensarization — how quickly newly diagnosed cases enter surveillance:

$$\text{Timeliness (\%)} = \frac{\text{Individuals dispensarized for the first time}}{\text{First-time diagnoses for conditions warranting dispensarization}} \times 100\%$$

Systematic observation — adherence to scheduled surveillance protocols:

$$\text{Systematic observation (\%)} = \frac{\text{Individuals receiving regular scheduled surveillance}}{\text{Total enrolled in dispensarization}} \times 100\%$$

Effectiveness Indicators — Outcomes (42)

$$\text{Recovery rate} = \frac{\text{Individuals achieving disease resolution}}{\text{Total dispensarized}}$$

$$\text{Improvement rate} = \frac{\text{Individuals demonstrating clinical improvement}}{\text{Total dispensarized}}$$

$$\text{Stability rate} = \frac{\text{Individuals remaining in same dispensarization group}}{\text{Total dispensarized}}$$

$$\text{Deterioration rate} = \frac{\text{Individuals progressing to higher severity groups}}{\text{Total dispensarized}}$$

Effectiveness Indicators — Mortality and Coverage (42)

Mortality (may be reported as proportion or rate):

$$\text{Mortality (proportion)} = \frac{\text{Deaths among dispensarized individuals}}{\text{Total dispensarized}}$$

$$\text{Mortality rate} = \frac{\text{Deaths}}{\text{Total person-time at risk}} \times 10^{n}$$

Coverage target: annual preventive examinations must reach **not less than 45%** of the eligible enrolled adult population

Clinical Outcome Targets (42)

Good control in **non-insulin-dependent diabetes mellitus**:

- HbA1c < **7.0%** (or < 8.0% for patients with severe hypoglycaemia history, reduced life expectancy, or advanced complications)
- Blood pressure < **140/85 mm Hg** for at least half the surveillance period

Good control in **cardiovascular disease**:

- Blood pressure < **145/90 mm Hg** in over half the period
- LDL cholesterol < **1.8 mmol/l** (ischaemic heart disease) or < **2.6 mmol/l** (other defined risk groups)

Annual stage summaries document disease dynamics, therapeutic effects, and outstanding needs

Occupational Medicine — Definition and Principles

Definition (37)

- **Occupational medicine** is the specialized field within public health and preventive medicine concerned with the relationship between work and health.
- The discipline seeks to **recognize, assess, predict, and control** workplace conditions that may exert either beneficial or harmful effects on worker health and well-being — extending beyond the mere absence of disease to encompass physical, mental, and social well-being.
- The field bridges clinical medicine, environmental science, engineering, and social policy.

Workplace Factors Affecting Worker Health (37)

Four broad categories of workplace determinants:

- Production conditions — noise, airborne particulates (dusts, fumes), vibration, thermal stress, humidity, ionizing and non-ionizing radiation, chemical exposures
- Technological and organizational factors — work organization, safety systems, physical and cognitive demands, monotony, ergonomics, job satisfaction
- Product-related factors — radioactive materials, chemical compounds, biological agents, allergens encountered through direct handling or environmental contamination
- Psychosocial climate — horizontal relationships among colleagues; vertical relationships with supervisors; organizational justice, harassment, and discrimination

Psychosocial Hazards (37)

Recent evidence positions psychosocial climate factors as threats **rivalling** traditional physical and chemical hazards:

- **Adverse conditions**: poor psychosocial climate is causally linked to depression, cardiovascular disease, and musculoskeletal disorders
- **Protective conditions**: supportive relationships and organizational justice buffer workers against other stressors and promote resilience

Work-related psychosocial hazards — job strain, work–life imbalance, workplace harassment — contribute substantially to population morbidity, disability, and economic burden

Contemporary occupational medicine cannot address physical hazards in isolation from organizational culture

Hierarchy of Controls (37)

Effective hazard management follows a strictly defined priority sequence:

Priority	Control type	Principle
1	Elimination	Remove the hazard entirely from the workplace
2	Substitution	Replace with a safer material or process
3	Engineering controls	Isolate the hazard — ventilation, enclosure, machine guarding
4	Administrative controls	Change work organization, schedules, procedures
5	PPE	Last resort — least reliable, depends on individual compliance

Fundamental Preventive Principles (37)

- **Prevent risks at source** — intervene at the point of hazard generation rather than attempting to protect workers from hazards already propagated into the environment
- **Adapt work to the worker** — design systems that accommodate human variation in strength, sensory capacity, and health status; not the reverse
- **Incorporate technical progress** — new machinery and processes often enable safer methods; continuous integration of innovation is an obligation
- **Prioritize collective over individual protection** — ventilation systems and machine guarding protect all workers without requiring individual compliance
- **Provide workers with information** — informed participation in hazard recognition and control is a right and a practical requirement of effective prevention

Objectives of Occupational Medicine Practice (37)

- **Protection and promotion of worker health** — injury prevention, early detection of work-related disease, healthy behaviour support, chronic disease management
- **Development of healthy work organizations** — work design providing adequate autonomy, resources, and opportunities for skill development
- **Preservation of work capacity** throughout working life, including support for an ageing workforce and return-to-work facilitation
- **Building a culture of safety** that treats worker health as a core organizational value

Occupational Medicine in Bulgaria

Key Concepts (37)

Concept	Definition
Occupational disease	Illness arising from the **cumulative impact** of workplace factors — requires detailed exposure assessment to establish aetiology; develops gradually
Occupational accident	**Sudden** health impairment occurring during work, typically resulting in immediate temporary or permanent disability — a discrete event (fall, impact)
Occupational risk	Probability of health impairment due to specific exposure; quantified as a function of severity of harm × probability of exposure

$$\text{Occupational Risk} = f(\text{Severity of Harm}, \text{Probability of Exposure})$$

Medical Surveillance — Regulation No. 3 (37)

Preliminary medical examinations assess fitness for a specific profession or position. Mandatory for:

- Individuals starting work for the first time
- Workers changing to a position involving hazardous factors
- Workers returning after a break exceeding **three months**
- **Minors under 18**: comprehensive multi-specialist examination required

Persons under 18 and pregnant or breastfeeding women are **legally prohibited** from performing heavy, dangerous, or harmful labour

Periodic Examination Frequencies (37)

General working population (by age):

Age group	Frequency
Under 18 years	Annually
18–40 years	Every 5 years
Over 40 years	Every 3 years

Workers exposed to harmful factors (by hazard degree):

Hazard degree	Frequency
First degree	Every 3 years
Second degree	Every 2 years
Third degree	Annually
Fourth degree (highest)	Every 6 months

Risk Assessment — Five Stages (37)

Risk assessment is the fundamental process through which employers identify, evaluate, and control workplace hazards — an **ongoing** obligation:

1. **Work categorization** — organize by departments, job categories, or production workflows
2. **Hazard identification** — workplace inspections, safety data sheets, injury records, direct worker consultation
3. **Risk evaluation** — assess severity of potential harm and likelihood of occurrence; qualitative to quantitative methods
4. **Risk control plan** — apply hierarchy of controls; assign responsibilities and timelines; reduce to lowest reasonably achievable level
5. **Review and update** — annually, or promptly after significant changes in processes or materials

Occupational Health Services (OHS) (37)

OHS are not healthcare facilities under Bulgarian law — they may not provide diagnosis or treatment. Their mandate is exclusively **preventive**.

Main functions:

- Assist employers in establishing occupational safety/health systems
- Assess occupational risks and worker health status
- Propose risk mitigation measures
- Monitor worker health and maintain **health dossiers** (kept 50 years — electronic and paper)
- Train workers in first aid, hazard recognition, and healthy workplace behaviour

OHS must be registered with the **Ministry of Health** and listed in a public registry

OHS — Composition and Governance (37)

Minimum required staffing:

Role	Requirement
Physician	Recognized specialty in **occupational medicine**
Technical specialist	Higher technical education + **3 years** occupational safety experience
Technical assistant	Secondary education + administrative support capacity

OHS may be established by: employers independently, employers jointly, or registered legal/physical entities under commercial law

OHS activities are supervised by state health control authorities

Employer Obligations and National Governance (37)

Employers bear **primary legal and ethical responsibility** for health and safety, stemming from their control over work organization and resources:

- Mandatory risk assessments and preventive planning
- Special protections for vulnerable groups: young workers, older employees, pregnant women
- Provision of reasonably adjusted workstations and schedules where required

National Council on Working Conditions — tripartite body chaired by the Minister of Labour and Social Policy; includes government ministries, NSSI, and representative employer and worker organizations

Legal framework: **Labour Code** and **Law on Health and Safety at Work**; supported by Regulations 5, 4, and 7

Thank you for your attention!