

OPJS UNIVERSITY, CHURU

SYLLABUS MASTER OF PUBLIC HEALTH SESSION 2013-14

First semester

1	PH001	Social and Behavioral Aspects of Public Health
2	PH002	Epidemiology
3	PH003	Epidemiology & Management of Communicable Diseases and Non-Communicable Diseases Programs
4	PH004	Biostatistics
5	PH005	Population Sciences
6	PH006	Women & Child Health and Gender Issues
7	PH007	Health System & Policies in Public Health

Second Semester

8	PH008	Ethics in Public Health
9	PH009	Health Economics & Health Care Financing
10	PH010	Environmental Health and Sustainable Development
11	PH011	Nutrition and Food Safety in Public Health
12	PH012	Health Communication and Behavior Change Communication
13	PH013	Research Methodology
14	PH014	Health Program Management

Specializations

1. Health Management Specialization - (III & IV Semester)

1	PH015	Strategic management
2	PH016	Organization Behavior and Design
3	PH017	Human Resource Development
4	PH018	Quality Assurance and Total Quality Management
5	PH019	Management Information and Evaluation System
6	PH020	Social entrepreneurship Marketing

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SEMISTER IV

7 PH029 Internship with health care organization - Thesis writing and presentation

2. Clinical Trials Specialization (III & IV Semester)

Semester - III

1 PH021 Epidemiology and principles of clinical research
2 PH022 Drug discovery and Development
3 PH023 Ethics in clinical trials
4 PH024 Drug safety and pharmacovigilence
5 PH025 Statistics and Data Management for clinical research
6 PH026 Designing of clinical trials
7 PH027 Regulatory affairs in clinical research
8 PH028 Management of clinical trials

Semester - IV

9 PH030 Internship with industry, Thesis writing and presentation

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SEMESTER - I

PH001 Social, Behavioral and Medical aspects of Public Health

- Public Health Biology
- Principles of Immunology and Role of Nutrition
- Communicable Diseases and Emerging Infections
- Non Communicable and Lifestyle Diseases Evidence Based Medicine
- National and global Disease Control Programmes
- Stakeholders in Public Health including NGO's and Social Support Networks
- Theories, research, and practice models at varying social ecological levels, including the intra-individual, inter-individual

Content

- Basic Human Anatomy and Physiology
- Difference between Medicine and Public Health Medicine
- Disease pathogenesis, diagnosis, diagnostic techniques and management of communicable and non - communicable diseases which are of high burden to the society.
- Basic concepts of immunology, immunity to infection and role of vaccination
- System wise outlook of Medicine and Significant Public Health Issues
- Assess implementation of interventions and understand reasons for their strengths and weaknesses.
- Highlight the role of epidemiology in medicine and introduce evidence based medicine.
- Health inequalities, the extent to which health care contributes, or fails to contribute to, population health, and how to determine the effects on health of policies in other sectors such as the environment.
- Concepts and measurement of equity and inequity in Health Concepts and principles of health impact assessment,
- Changing paradigms of health and health care, making health and health care universally accessible.
- National Health Systems
- Conflict and disaster management

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PH002. Epidemiology

- Fundamentals Of Epidemiology
- Epidemiologic Study Design And Analysis
- Methodological Challenges In Epidemiologic Research
- Epidemiological Inferences In epidemics and Outbreak Investigations
- Critical Analysis of Published Epidemiological Studies
- Disease Surveillance Clinical/ Field trial methodology

Content

- Basic Concepts / Basics of Epidemiology
- Introduction
- Measuring the occurrence of diseases
 - Measures of Morbidity (Incidence, Prevalence)
 - Measures of Mortality (Mortality Rates)
- Measures of Prognosis
 - Case Fatality rate
 - Five Year Survival
 - Observed Survival (Life Table)
 - Median Survival Time
 - Relative Survival Time
- Measurement of Risk
 - Relative Risk
 - Odds Ratio
 - Attributable Risk
- Epidemiological study design and Analysis:
- Study Design: Cross sectional, cohort, case control and intervention studies
- Assess strengths and limitations of different study designs
- association and Causation
- Causality, random errors, Bias, Interaction and Confounding factors
- Methods for assessment of Effect Modification
- Strategies to allow / adjust for confounding in design and analysis
- Design, application, strength and weakness of studies
- Concepts of Validity and Reliability(Causation and Casual interference)
- Preventive Strategies:
- Concepts of Screening,
- Disease Surveillance.
- Outbreak investigation,

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- Benefits and limitations of different forms of epidemiological evidence in formulating policy decisions
- Interpretations of published epidemiological studies

PH003. Epidemiology & Management of Communicable Diseases and Non-Communicable Diseases programs

Conceptual Outline:

This is essentially a theoretical cum field visit based module, taking students through the theoretical elements of diseases and disease transmission and management, with field visits complementing the teaching done for public health programs.

Key Topics

- Classification of various communicable and non-communicable diseases and also appreciate the modes of evolution of disease stages.
- Burden of Communicable and non-communicable diseases
- Policies and programs used in the control of important communicable and non-communicable diseases,
- Issues involved in their implementation and evaluation;
- Appreciate the issues involved in managing and evaluating various National health programs

Contents

- Classification of diseases
- Burden of diseases
- Disease cycle / transmission
- Millennium Development goals
- National Health programs
- Communicable diseases
- Non-communicable diseases

PH004. Biostatistics

Key Topics

- Principles Of Biostatistics and Organization of Data
- Properties of measurement, Statistical Procedures and Analysis
- Sampling
- Developing indices, Measuring Reliability and validity, Life-Tables And Vital Statistics

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- Analysis of data Statistical Methods and SPSS Application Course content
- Organization of data - Primary and Secondary
- Sources of data – Nature and functions of primary and
- Secondary data. Difference between scores and other non-score data
- Properties of measurement - Measuring and
- interpretation of score/ other data – Methods of scaling
 - Nominal, Ordinal, Ratio and Interval scale.
- Developing indices - Nature and function of an
- Index. Building composite scales- simple and weighted scale – Developing weighted scores by Statistical
- Methods – Data Reduction techniques.
- Measuring Reliability and validity of scales and such scales.
- Statistical Methods and Application through SPSS processing.
- Data Organization – Raw data files and Matrix data files.
- Transformation and Manipulation of SPSS file.
- Statistical Procedures.
 - Descriptive Statistics
 - Univariate Statistics
 - Bi variate Statistics.
 - Multivariate Statistics.

PH005. Population Sciences

Key Topics

- Concepts of Population and Development
- Sources of Data
- Mortality, Morbidity and Fertility
- Model Life Tables and Indirect Methods of Estimating Vital statistics.
- Migration, Population Growth, Ageing, Problems, Projections

Course content

- Concepts of Population and Development
 - Meaning, Nature and scope of demography,
 - population growth, structure, characteristics and distribution; Components of population change, Demographic Transition
- Sources of data : Census, surveys and registries - objectives and components
- Fertility – Concept and definitions of basic terms like Fecundity, Sub-fecundity, fertility, conception, pregnancy, abortion, still-birth, live-birth, menarche, menstrual

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cycle, menopause, family size, sources of fertility data and their limitations.
Measures of Fertility factors effecting fertility

- Mortality - Basic concepts, importance, sources of mortality data and errors in death statistic and measurement of errors; Mortality measures: Crude death rates, specific death rates by age, sex, causes of death, marital status and other characteristics; standardized rates; Life tables: Meaning, assumptions, type, functions and uses of life tables, construction of life tables from census data, mortality comparisons; multiple decrement life tables and cause specific life tables.
- Migration
- Ageing Population
- Population growth and projections

PH006. Women and Child Health and Gender Issues

- Women's Health – Concepts, Definition And Measures Customs, Norms, Attitudes And Practices In India
- Adolescent Sexual Health And Family Planning
- RTI's , STI And HIV/AIDS
- Millennium Development Goals And Government Programs In Reproductive Health

Course Content

- Women's Health – concepts, definition and measures.
- Customs, norms, attitudes and practices pertaining to various aspects of women's health including menstruation, puberty, childbirth and menopause; sexual and reproductive rights; infertility
- Adolescent Sexual Health & Contraception
- Role and involvement of men in RH.
- Methods of Family Planning
- Health Benefits of Family Planning
- Contraceptive Behavior, Measurement & Service Delivery
- Quality of Family Planning Care
- Gender, autonomy, empowerment and status of women, domestic violence in India
- Maternal morbidity and mortality.
- Abortion, Family Planning
- RTIs & STIs and HIV/AIDS
- Response of Govt. to Issues of Millennium Development Goals in the context of women and child health

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PH007. Health System & Policies in Public Health

Key Topics

- Policy Making Process, With Historical, Ethical, Legal And Political Realities
- Basic Model And Function Of Health Service
- Indigenous Systems Of Medicine
- International Health
- Persistent and Widespread Issues In Providing Health Services
- Standard Frameworks For Policy Analysis Course Content Policy:
- Understanding, need and goals for various policies related to public health - Health policy, population policy, nutritional policy, research policy, women policy, child policy etc.
- Policy environment
- Methods to assess the needs of for the policy development / assessment process.
- Frameworks for policy analysis, applying these to the assessment of current policies.
- Factors influencing the policy: external factors (interest groups as one example), politics and the like.
- Health care system:
 - Primary Health Care institutions (sub-centers, primary health centers, community health centers, district hospitals),
 - Teaching hospitals, specialist hospitals, and health insurance schemes like Employees State Insurance and Central Government Health Scheme, defense health services, Railway health services.
- Private Health care system: Private hospitals, Polyclinics, Nursing homes and dispensaries, one-doctor practices; Major voluntary health agencies;
- Planning at Central, State, District, Block and Village levels like Union Ministry of Health and Family Welfare, Directorate General of Health Services, Central Council of Health, State Ministry of Health, State Health Directorate, District Health Organization etc
- Private health sector entities like private hospitals, polyclinics, nursing homes and dispensaries, one-doctor practices; Major voluntary health agencies;
- Indigenous systems like Ayurveda, Homeopathy and Unani.
- Guided visits to one institution in each of the following category viz. PHC, CHC, Taluk Hospital, General Hospital, sub-centre and Anganwadi are undertaken to help the learning process
- Health Care Delivery Structure:
 - Central : State, District, Block and Village levels like Union Ministry of Health and Family Welfare, Directorate General of Health Services, Central Council of Health,
 - State level : Ministry of Health, State Health Directorate, District Health Organization etc

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- In-sectoral co-ordination
- International Health: Health care systems in developing countries and developing countries

SEMESTER - II

PH008. Ethics in Public Health

Key Topics

- History of Ethics in Health Research
- Theories and Principles and Guidelines of Research
- Ethics Principles for Ethical Decision Making
- OHRP and FWA Approvals And Institutionalising Ethics

Course Content

- History of ethics in health research, from Nuremburg trials, Helsinki principles, the Belmont Report and the ICMR guidelines, Govt. of India Regulations,
- Theories and Principles of Research Ethics
- The various bioethics guidelines, Nuremburg, Helsinki, CIOMS, UNAIDS, Nuffield, GCP, etc
- Concepts in research ethics - confidentiality and privacy, informed consent, vulnerable subjects and special treatments, standards of care - principles, review processes etc.
- Application of the various principles for ethical decision making
- Institutionalising ethics - formation of IRBS and development of guidelines including OHRP and FWA approvals.

PH009. Health Economics & Health Care Financing

Key Topics

- Basics Of Health Economics And Financing
- Sector Reforms
- Fundamentals Of Budgeting And Financial Management Cost-Benefit Analysis: Theory & Techniques
- Health Care Financing - Case Studies
- Medical Insurance and Public Private Partnerships.

Course Content

- Analyze determinants of demand, supply and costs of health service
- Apply the concepts of elasticity, marginal analysis and opportunity cost
- Understand the basic market model in different aspects of health care, cases of market failure, roles and limitations of market and government in the finance and organization of health care

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- Understand how different health systems generate incentives to the society, and the likely outcomes in terms of efficiency and equity
- Understand issues in measurement of costs and benefits of health care
- Understand the principles of economic evaluation as applied to health care
- Cost effectiveness analysis in health care interventions
- Quality of life and statistics in health economic evaluation including QALY's and DALY's

PH010. Environmental Health and Sustainable Development

Key Topics

- Public Health Ecology
- Air And Noise Pollution Control
- Water Pollution, Solid Waste Management And Hazardous Waste
- Sustainable Development And The Environment
- Waste Minimization & Cleaner Production

Course Content

- Air and Noise Pollution Control: Definition of air pollution - pollutants and their sources - effects on human health, vegetation and climate of air pollution - air pollution control legislation - noise pollution - sources and effects - control measures.
- Water Pollution: Definition, sources, classification of water pollutants - organic waste, oxygen demanding waste, disease causing wastes, synthetic organic compounds. Sewage and agricultural run-off, inorganic pollutants suspended solids and sediments, radioactive materials, BOD, COD, Waste water treatment-primary secondary, tertiary.
- Solid waste management - classification, origin, methods of solid waste treatment and disposal-compositing, sanitary land filling, thermal process (incineration, Pyrolysis) Recycling and reuse.
- Hazardous waste - sources, identification and management of hazardous waste - treatment and disposal
- Development and The Environment: Climate change - ozone depletion global warming, green house effect. From unsustainable to sustainable development - urban problems related to energy - water conservation, rainwater harvesting, and watershed management - resettlement and rehabilitation of people - its problems and concerns.
- Waste Minimization & Cleaner Production: Introduction, waste minimization in industries - Distilleries, textile industry, leather industry - cleaner production related to the above industries.

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PH011. Nutrition and Food Safety in Public Health

Key Topics

- Principles of Nutrition
- Disease Specific Nutrition
- Community Nutrition and Nutritional Assessment
- Policy and Programmes for Nutrition Related Issues
- Food Safety

Course Content

- Basics of Nutrition: Importance of nutrition, meal pattern and balanced diet for preschooler school going children, adolescents, pregnant & lactating mothers, old age, athletes, space nutrition
- Disease specific Nutrition: Diet modifications during various diseased condition diabetes, obesity, heart diseases, liver and kidney, TB, HIV
- Community Nutrition: Deficiency disorders and dietary management - PCM, anemia, goiter and vitamin & mineral deficiency. Prevalence of under nutrition and malnutrition in India - Assessment of nutritional status - anthropometric measurements - clinical examination delay survey - malnutrition infection and infestation effect of malnutrition in infancies, pregnant & nursing mothers - Nutrition organization programmes - National , international & voluntary organizations - undertaken to combat malnutrition
- Policy and programmes for nutrition related Issues
- Food Safety: General principles of hygiene - importance of food borne illness - prevention of contamination, food toxicants, food additives, adulteration and food standards - Importance of safe drinking water - purification methods

PH012. Health Communication and Behavior Change Communication

Key Topics

- ❖ Basics Of Communication
- ❖ Behavioral Change Model,
- ❖ BCC, Monitoring Behavioral Change
- ❖ Communication Research

Course Content

- Communication Process, Function and Types
 - Barriers to communication
 - Mass Communication

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- Communication Skills
- Community Participation
 - Concepts and Types
- Information, Education and Communication
 - IEC in Health and Family Welfare
 - IEC structure in districts
 - Innovative strategies and evaluation
- Behavioral Change Communication
 - Best practices and strategic approaches
 - BCC framework, implementation strategy
- Target Audience Segmentation
 - Different approaches to target audience
- Physician - Patient Communication
 - Why and how of physician - patient relationship
- Data for IEC Planning
- Relationship Management

PH013. Research Methodology

Key Topics

- Quantitative and Qualitative
- Data Management: Packages for Analysis - Quantitative and Qualitative
- Health Care Organizations: Public Health System and Its Boundaries
- Comparative Health Systems

Course Content

- Basics of Research - Definitions and designs
- Uses of Research in public health
- Formulation of research problems
- Developing hypothesis
- Writing research questions
- Sampling: How much sample and how to choose, principles of sampling and terminology
- Design and development of Interview schedule, questionnaire construction, pre-testing (reliability and validity)
- Research ethics (protection of human subjects) ,
- Data collection - Field work, mapping and listing operations, selecting of respondents and MIS for major research projects
- Data management - editing, entry and preparing data sets for analysis
- Data analysis using spss/epi. Info/stata
- Qualitative research

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- Development of conceptual framework,
- Qualitative methods: FGDs, indepth interviews, biographies, participatory methods, participant observation etc..
- Data collection, recording, Data analysis (manual and computer based using QSR)

PH014. Health Program Management

Key Topics

- Principles Of Planning, Management,
- PIME, HMIS
- Management of Health Services
- Disaster Management with Focus on Nutrition, And Livelihood Assistance

Course Content

- Principles of Management and results based management
- Project management cycle
- Situational analysis - SWOT
- Strategy formulation (formulation of alternatives and selection of a strategy)
- Planning tools: Log frame, PERT, CPM
- Quality assurance in project management
- Activity based implementation plan
- Human aspects of project management like motivating people, team building, improving personal influence and effectiveness.
- Gender issues in Project Management.
- Monitoring
- MIS
- Evaluating the projects
- Developing action plans for project implementation

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1. Health Management Specialization - (III)

PH0015 Strategic Management

Introduction to the strategic management- Vision, Mission, Strategy framework for institutional approach to public health - Public-Private Partnership as a Strategic Public Health Management - Case studies in Strategic Management - TQM as a public health management strategy - Healthy Plan it -Public Health Planning - Utilisation of Health Services - (Public/Private facilities & Urban/Rural) Human Resource challenges and issues in Public Health Management - Models in Healthcare Delivery - Delegation - Change Management Problem solving tools - Country/Region Strategy planning from public health perspective - Field Visits

PH0016 Organisation Behaviour and Design

Health services Org-Systems - The changing health care system - Ecology of Healthcare - Organizations - Manager and Managerial Activity. Learning: Classical Conditioning - Social Learning - Operant Conditioning - Schedules of reinforcement. Motivation : Define Motivation - Myths about Motivation - Theories of motivation. Leadership: Understand what leadership is and what is not - Key features of leadership perspective - Challenges in healthcare organizations - Distinction between leadership and management. Groups and teams: Stages of team development- Team effectiveness - Understanding and improving team performance - A model of team effectiveness. Work Design: Psychological Approach - Technical Approach - Approaches to work design - Changes in design of health care work - Dividing work into jobs Power and Politics: Power, influence and politics - Definition - Sources of Power - Abuse of Power in Organizations - Power strategies and tactics - Transactional Analysis (TA). Organizational design: Various types of organizational design - Organizational Structure - Organizational Culture. Organizational performance : Efficiency and effectiveness

PH0017 Human Resource Development in Public Health

Preparatory: Essential principles of systems Theory. Foundational: Evolutionary Psychology Model of Individual Human Behaviour - Systems model and evolving understanding of collectives and organisations. Core Learning: The HRM processes cycle from job (role) analysis, recruitment, training, career development, performance evaluation and enhancement, compensation, communication, decisions, workplace

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issues, organisational culture, leadership. Applicatory: Strategic HRM, Contemporary issues, Tools relevant to systems practice in organisational HRM context.

PH0018 Quality Assurance and Total Quality management

Introduction to quality : Definition, concept, History - TQM framework - Benefits, Awareness and Obstacles - Quality - Vision, Mission and Policy Statements - Customer Focus - Customer Perception of Quality, Translating needs into requirements, - Principles and Philosophies of Quality Management: Overview of the contributions of Walter Shewhart, Deming & Juran and others- Concepts of quality circle - Japanese 5S Principles and 8D Methodology Dimensions of Quality - Quality assurance - A Model Defining Quality - Measuring Quality -Six Sigma - Quality assessment : Concept and tools - Improving Quality - Institutionalizing QA

PH0019 Management Information and Evaluation System

Information System in Health care - Perspectives on information systems -- The basic concepts - Steps and approaches in developing HMIS- Reviewing the existing system . Defining data needs - data flow - Designing the data collection and reporting tools - procedures for data processing - Monitoring and evaluating the system - Dimensions of information systems - Contemporary Approaches to Information Systems - Learning to Use Information Systems - New Opportunities with Technology - HMIS in Various National Health Programs

PH0020 Social Entrepreneurship and marketing in public Health

Introduction to Entrepreneurship - Commercial and Social, Frameworks for Social Entrepreneurship - Managing for Social Enterprises - Culture, Leadership and Strategy - case studies in Social Entrepreneurship - NGO management - guidelines & regulations and management - Concepts of marketing- role of Marketing in Health care - Social Marketing - process and case studies

2. Clinical Trials Specialization (III)

PH021 EPIDEMIOLOGY AND PRINCIPLES OF CLINICAL RESEARCH

Epidemiology and research Designs - Introduction to Clinical Research - Pre clinical drug development process with reference to recent advances - Various stages of clinical trials (Phase I to Phase IV) - Types of trials (Bioequivalence, superiority etc) - Good Practices (GCP,GMP,GLP)

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PH022 DRUG DISCOVERY AND DEVELOPMENT

Overview of Drug Development Process - ADME, Pharmacodynamics & Pharmacokinetics - Preclinical Toxicity studies - Cost of drug development & ethical consideration including IPR issues - Regulatory process in preclinical drug development

PH023 ETHICS IN CLINICAL TRIALS

Principles of ICH - GCP - Ethical Principles and their origin - Ethics in clinical research: As per ICMR & GCP - Ethics committees: Roles & responsibility of IEC and IRB - Ethics in relation to vulnerable groups & special situations

PH024 DRUG SAFETY & PHARMACOVIGILANCE

Introduction to Pharmacovigilance - Pharmacovigilance in India & globally. - Definitions of AE, ADR, SAE, UADR and its mechanisms with Drug interaction - Introduction to Pharmaco-economics - ADR recording & reporting; Monitoring in clinical trials

PH025 STATISTICS AND Data management FOR CLINICAL RESEARCH

Role of Biostatistics in clinical trial. - Statistical tests of significance and their uses (Examples) - Softwares in Clinical Research - Data management methods in clinical trials - Computer applications in clinical research

PH026 DESIGNING OF CLINICAL TRIALS

Clinical trial design: Types of study designs - Sampling, sample size, Inclusion and Exclusion criteria - Randomization and its types - Definition of protocol, its importance and purpose - Protocol designing and SOPs

PH027 REGULATORY AFFAIRS IN CLINICAL RESEARCH

Regulatory Authority in India (DCGI & CDSCO) - Schedule Y of Drugs & Cosmetics Act - International Scenario of Regulatory Aspects: FDA, CFR, - Essential documents in clinical research - Regulatory aspects of preclinical drug development

PH028 MANAGEMENT OF CLINICAL TRIALS

Principles and phases of Project Management - Medical writing in clinical research and its importance - CRF designing and data retrieval from CRF - Database designing and

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soft ware for clinical data management - Monitoring and its role in clinical trials & site management

SEMESTER - IV

1. Health Management Specialization

PH029 Internship with health care organization – Thesis writing and presentation

2. Clinical Trials Specialization

PH030 Internship with industry, Thesis writing and presentation