

IHMS - MPH DETAILED COURSE CONTENTS

COURSES & CREDIT HOURS

SEMESTER 1

Course	Credit Hours
Introduction to Public Health	1
Epidemiology - Basic	3
Biostatistics - Basic	3
Population Dynamics	2
Informatics in Public Health	3
Qualitative Research Practice	3
Research Design	2
Health, Illness & Society (Medical Anthropology)	2
Environmental & Occupational Health	3
Total	22

SEMESTER 2

Course	Credit Hours
Health Systems Analysis	3
Reproductive Health	3
Health Planning	3
Communicable & Non-communicable Disease Control	3
Health Promotion	3
Health Systems Management	3
Research Design 2	1
Child Health	3
Total	22

SEMESTER 3

Course	Credit Hours
Healthcare Financing / Applied Nutrition	3
Hospital Management / Advanced Epidemiology & Biostatistics ***	3
Community based Reproductive Health Interventions / Health Policy	3
Research Design 3	1
Proposal + Dissertation Writing	2 + 8
Total	20

*** Not offered by the Institute as an Elective

SEMESTER 4

Course	Credit Hours
Practicum & Report Writing	2
Total	2
Grand Total	66

COURSE CONTENTS

SEMESTER 1

INTRODUCTION TO PUBLIC HEALTH

1. Historical Perspectives in Public Health
2. Contemporary Issues in Public Health
3. Health & its Determinants
4. Domains of Public Health (Health Protection, Health Improvement, Health Services)
5. Functions of Public Health (Public Health Intelligence, Academic Public Health & Workforce Development)
6. Competencies of Public Health
7. Brief Health Profile of Pakistani Population
8. Public Health Programmes in Pakistan
9. Health Policies in Pakistan
10. Consensus Building Exercises - Group Work
11. Future Directions for Public Health

Recommended Readings:

1. Basch PF. Textbook of international health, 2nd ed. New York, NY: Oxford University Press.
2. Brownson RC, Baker BA, Leet TL, Gillespie KN. Evidence-based public health. New York, NY: Oxford University Press; 2003.
3. Detels R, McEwen J, Beaglehole R, Tanaka H (eds). Oxford textbook of public health: the practice of public health, 4th ed. Oxford: Oxford University Press; 2002.
4. Malin N, Wilmot S, Manthorpe J. Key concepts and debates in health and social policy. Philadelphia, PA: Open University Press; 2002.
5. Porter D. Health, civilization and the state, 1st ed. New York, NY: Chapman and Hall Routledge; 1999.
6. Rohde J, Wyon J. Community-based health care lessons from Bangladesh to Boston, 1st ed. Cambridge, MA: Management Sciences for Health in collaboration with the Harvard School of Public Health; 2002.
7. Schneiderman N, Speers MA, Silva JM, Tomes H, Gentry JH (eds). Integrating behavioral and social sciences with public health, 1st ed. Washington DC: American Psychological Association; 2001.
8. Tulchinsky TH, Varavikova EA. The new public health: an introduction for the 21st century. San Diego, CA: Academic Press; 2000

EPIDEMIOLOGY - BASIC

1. What is Epidemiology? Scope and Functions
2. Concept of Population in Epidemiology
3. Variation in Disease by time, place & person
4. Variation; Role of Error, Bias and Confounding
5. Cause and Effect; the Epidemiological Approach
6. Concept of Risk and Measures of Disease Frequency
7. Presentation and Interpretation of Epidemiological Data on Risk
8. Study Design; Interdependence & Types
9. Paradigms; the Evolution of Epidemiology
10. Validity & Reliability of Data
11. Surveillance & Screening

12. Outbreak Investigation
13. Practice of Epidemiology in Public Health

Recommended Readings:

1. Beaglehole R, Bonita R, Kjellstrom T. Basic epidemiology. Geneva: World Health Organization; 1993.
2. Gordis L. Epidemiology. Philadelphia, PA: WB Saunders Company; 1996.
3. Greenberg RS, Daniels SR, Flanders WD, Eley JW, Boring JR. Medical epidemiology, 2nd ed. New York, NY: McGraw Hill; 1996.
4. Hennekens CH, Buring JE. Epidemiology in medicine. Boston, MA: Little Brown and Company; 1987.
5. Holford TR. Multivariate methods in epidemiology. New York, NY: Oxford University Press; 2002.
6. Last JM. A dictionary of epidemiology, 2nd ed. New York, NY: Oxford University Press; 1988.
7. Lilienfeld AM, Lilienfeld DE. Foundations of epidemiology, 3rd ed. New York, NY: Oxford University Press; 1994.
8. MacMahon B, Thomas FP. Epidemiology: principles and methods, 1st ed. Boston, MA: Little, Brown and Company; 1970.
9. Mausner JK, Bahn AK. Epidemiology: an introductory text, 2nd ed. Philadelphia, Pa: WB Saunders Company; 1985.
10. Olsen J, Saracci R, Trichopoulos D, (eds). Teaching epidemiology: a guide for teachers in epidemiology, public health and clinical medicine, 2nd ed. Oxford: Oxford University Press.
11. Fletcher RH, Fletcher SW, Wagner EH. Clinical epidemiology: the essentials, 3rd ed. Philadelphia, PA: Williams & Wilkins Publishers; 1996.
12. Szklo M, Nieto FJ. Epidemiology: beyond the basics. Boston, MA: Jones and Bartlett Publishers; 2000.
13. Vetter N, Matthews I. Epidemiology and public health medicine, 1st ed. Edinburgh: Churchill Livingstone; 1999.

BIostatistics - Basic

1. Introduction and Scope of Biostatistics
2. Variables
3. SPSS - Software Introduction
4. Scales of Measurement

5. Types of Data
6. Descriptive Statistics
7. Measures of Central Tendency
8. Measures of Dispersion
9. Summarizing and Presenting Data
10. Textual and Pictorial Representation of Data
11. Probability
12. Probability Distributions
13. Chance VS Statistical Difference
14. Applying Statistical Tests
15. Confidence Intervals
16. Error and Bias
17. Sampling Techniques
18. Correlation and Regression - Introduction

Recommended Readings:

1. Altman DG. Practical statistics for medical research, 3rd ed. London, UK: Chapman & Hall; 1991.
2. Colton T. Statistics in medicine, 1st ed. Boston, MA: Little Brown and Company; 1994.
3. Daniel WW. Biostatistics: a foundation for analysis in the health sciences, 5th ed. New York, NY: John Wiley & Sons; 1991.
4. Kirkwood BR. Essentials of medical statistics, 2nd ed. Oxford, UK: Blackwell Scientific Publications; 1988.
5. Selvin S (ed). Statistical analysis of epidemiologic data, 3rd edition. New York, NY: Oxford University Press; 1991.

POPULATION DYNAMICS

1. Introduction to Population dynamics: Various static and dynamic measures of populations
2. Population and Health: An introduction to Epidemiology
3. Visit to Federal Bureau of Statistics
4. Demographic perspective and basic demographic equations
5. Sources of data including census
6. Salient features of population pyramids

7. Concepts and theories of demographic transition
8. World population growth patterns and population momentum
9. Mortality & measures of mortality
10. Global burden of diseases
11. Fertility, natural increase and reproduction rates
12. Characteristics of Pakistani population and other countries
13. Migration and urbanization
14. Population, Poverty and Politics
15. Islam and family planning
16. Population growth and aging
17. Population Policy

Recommended Readings:

1. Haupt A, Kane TT. Population handbook. Washington, DC: Population Reference Bureau; 1997. Available from: URL: http://www.prb.org/pdf/PopHandbook_Eng.pdf
2. Palmore JA, Gardner RW. Measuring mortality, fertility and natural increase: a selfteaching guide to elementary measures. Honolulu: East-West Population Institute, EastWest Centre; 1983.
3. Population Reference Bureau. World population: more than just numbers. Washington DC: Population Reference Bureau; 1999

INFORMATICS IN PUBLIC HEALTH

1. Introduction to computers
2. Learning the basics in word processing
3. Some advanced functions in Word, Power point and Excel
4. Introduction to EPIINFO:
 - Data entry procedures
 - Data processing procedures
 - Data analysis procedures
 - Graphics in EPIINFO
5. Introduction to SPSS:
 - Data entry procedures
 - Data processing procedures
 - Data analysis procedures.
 - Graphics in SPSS.
6. Introduction to STATA:
 - Data entry procedures

- Data processing procedures
- Data analysis procedures
- Using the graphics in STATA

Recommended Readings:

1. Stata Corporation. Stata release 8: user's guide. College Station, Texas: Stata Press; 2003.
2. Other manuals for statistical softwares
3. Help options in the software programmes

QUALITATIVE RESEARCH PRACTICE

1. What is qualitative research?
2. Philosophical Issues in Public Health
3. Qualitative Research as an Approach
4. Theoretical Underpinnings
5. Methods & Methodology
6. Functions of Qualitative Research Methods
7. Design Issues; Questions, Settings & Time Frame
8. Data Collection Methods
9. Negotiating Research Relationships
10. Designing & Selecting Samples
11. Concept of Triangulation
12. Observational Methods
13. Interviews (In-depth, Key Informants, Focus Groups)
14. Participatory Methods
15. Reflexivity and its Use in Qualitative Research
16. Sampling Strategies
17. Fieldwork Strategies
18. Analysis; Principles, Practices, Processes
19. Computer assisted Qualitative Analysis
20. Generalizing from Qualitative Research
21. Reporting Qualitative Findings
22. Challenges & Opportunities

Recommended Readings:

1. Annett H, Rifkin SB. Guidelines for rapid participatory appraisals to assess community health needs: a focus on health improvements for low-income urban and rural areas. Geneva: World Health Organization; 1995. Document no. WHO/SHS/DHS/95.8; Distr: General.
2. Arole M, Arole R. Jamkhed: a comprehensive rural health project. London and Basingstoke: Macmillan Education Ltd; 1994.
3. Bernard HR. Research methods in anthropology: qualitative and quantitative approaches, 2nd ed. Walnut Creek, CA: AltaMira Press; 1995.
4. Bryman A, Burgess RG (eds). Analyzing qualitative data. London: Routledge, 1994.
5. Emerson RM, Fretz RI, Shaw LL. Writing ethnographic fieldnotes. Chicago: University of Chicago Press, 1995.
6. Hahn RA, Harris KW (ed). Anthropology in public health: bridging differences in culture and society. Oxford: Oxford University Press; 1999.
7. Hardon A, et. al. Applied health research manual: anthropology of health and health care. Amsterdam: Aksant Academic Publications; 2001.
8. Helman CG. Culture, health and illness, 4th ed. New York, NY: Arnold Publishers; 2001.
9. Johnson TM, Sargent CF (eds). Medical anthropology: contemporary theory and method. New York, NY: Praeger, 1990.
10. Kleinman, A. Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine and psychiatry. Berkeley, CA: University of California Press; 1984
11. Maier B, G6rger R, Kielmann AA, Diesfeld HJ, Korte R. Assessment of the district health system: using qualitative methods. London, UK: Macmillan Press Ltd; 1994.
12. Scrimshaw NS, Gleason GR (eds). Rapid assessment procedures: qualitative methodologies for planning and evaluation of health-related programs. Boston, MA: International Foundation for Developing Countries; 1992.
13. Spradley JP. Participant observation. Fort Worth: Harcourt Brace Jovanovich College Publishers; 1980.
14. Spradley, JP. The ethnographic interview. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers; 1979.

HEALTH, ILLNESS & SOCIETY (MEDICAL ANTHROPOLOGY)

1. Introduction and Concepts
2. Gender and Health

3. Politics of Health; Social, Policy & Health of Populations
4. Law and Public Health
5. Ethics and Public Health
6. Social Determinants of Health
7. Economics of Health
8. Rapid Urbanization and its Impact on Health
9. Health Inequalities
10. MDGs to SDGs
11. Concepts & Definitions of Medical Anthropology
12. Health & Disease
13. Illness & Sickness
14. Concept of Body
15. Biological & Social Model of Illness
16. Explanatory Models
17. Emic and Etic Perspectives
18. Culture bound Syndromes
19. Ethnocentrism and Cultural Relativism
20. Real Remedies
21. Self-care
22. Medical Pluralism
23. Patterns of Resort and Health Seeking Behavior
24. Behavioral Change
25. Disability and Disease
26. Health & Social Care
27. Role of Anthropology in Planning and Management
28. Govern mentality & Biological Citizenship
29. Migration & Ethnicity
30. Applied Anthropology in Public Health and Health Promotion

Recommended Readings:

1. Anand S, Fabienne P, Sen A. Public health, ethics, and equity, 1st ed. London, UK: Oxford University Press; 2004.

2. Baldock J, Manning N, Miller S, Vickerstaff S (eds). *Social policy*, 3rd ed. Oxford: Oxford University Press; 1999.
3. Bury M, Gabe J (eds). *The sociology of health and illness: a reader*. London, UK: Routledge; 2004.
4. Danis M, Clancy CM, Churchill LR. *Ethical dimensions of health policy*. London, UK: Oxford University Press; 2002.
5. Detels R, McEwen J, Beaglehole R, Tanaka H (eds). *Oxford textbook of public health: the practice of public health*, 4th ed. Oxford: Oxford University Press; 2002.
6. Doyal L. Gender equity in health: debates and dilemmas. *Soc Sci Med*. 2000;51: 931-9.
7. Evans T, Whitehead M, Diderichsen F, Bhuiya A, Wirth M. *Challenging inequities in health from ethics to action*. New York, NY: Oxford University Press; 2001.
8. Gostin LO (ed). *Public health law and ethics: a reader*. California: University of California Press; 2002.
9. Hawe P, Shiell A. Social capital and health promotion: a review. *Soc Sci Med*. 2000;51: 871-885.
10. Hertzman C, Siddiqi A. Health and rapid economic change in the late twentieth century. *Soc Sci Med*. 2000;51: 809-19.
11. Lloyd SP. Population ageing in developed and developing regions: implications for health policy. *Soc Sci Med*. 2000;51: 887-895.
12. Tangcharoensathien V, Harnvoravongchai P, Pitayarangsarit S, Kasemsup V. Health impacts of rapid economic changes in Thailand. *Soc Sci Med*. 2000;51: 789-807.
13. Zakus JD, Lysack CL. Revisiting community participation. *Health Policy Plan*. 1998;13: 1-12

ENVIRONMENTAL & OCCUPATIONAL HEALTH

1. Introduction to Environmental Health Issues
2. Environmental Health Issues of Pakistan
3. Human Impact on the Environment
4. Outdoor (ambient) Air pollution
5. Distribution of topics and outline of student presentation.
6. Introduction to problem solving paradigm
7. Environmental Impact on Human Health
8. Water Resources
9. Agents in the Environment
10. Water treatment
11. Visit to Simly Dam Water Treatment Plant
12. Principles of Exposure, Dose & Response

13. Solid and Hazardous Waste
14. Toxicological Aspects of Environmental Exposure
15. Sanitation options in developing countries
16. Visit to Islamabad Waste Water Treatment Plant
17. Visit to Islamabad Solid Waste Garbage Dump
18. Toxicological aspects of Environmental exposure
19. Industrial Hygiene
20. Risk Assessment

21. Risk Communication
22. Environment Impact Assessment
23. Conducting a walk through examination in industry
24. Visit to Heavy Mechanical Complex , Taxila
25. Food Borne Diseases
26. Food Sanitation
27. Noise Pollution
28. Environmental Law
29. Radiation
30. Healthy Cities and Villages

Recommended Readings:

1. Aron JL, Patz JA (eds). Ecosystem change and public health: a global perspective. Baltimore, MD: Johns Hopkins University Press; 2001.
2. LaDou J. Current occupational and environmental medicine, 3rd ed. New York, NY: Lange Medical Books/McGraw-Hill; 2004.
3. Lippmann M, Cohen BS, Schlesinger RB. Environmental health science, 2nd ed. New York, NY: Oxford University Press; 2003.
4. Moeller WD. Environmental health, 2nd ed. Cambridge, MA: Harvard University Press; 1997.
5. Moore GS. Living with the earth: concepts in environmental health science, 2nd ed. Boca Raton, FL: Lewis Publishers; 2002.
6. Nadakavukaren A. Man and environment: a health perspective, 3rd ed. Prospect Heights, IL: Waveland Press; 1990.
7. Sellers CC. Hazards of the job: from industrial disease to environmental health science. Chapel Hill: University of North Carolina Press; 1997.
8. Steiner GA, Miner JR, Gray ER. Management policy and strategy. New York, NY: Macmillan Education Ltd; 1986.
9. Vesilind PA, Peirce JJ. Environmental pollution and control, 4th ed. Boston, MA: Butterworths Publishers; 1983.

10. Yassi A, Kjellström T, de Kok T, Guidotti T. Basic environmental health. New York, NY: Oxford University Press; 2001

SEMESTER 2

HEALTH SYSTEMS ANALYSIS

1. Definitions of health input, output and outcomes.
2. Health System: Conceptual Frameworks
3. Health System: Terms and Concepts
4. Systems Approach
5. Micro Health System: Kielmann Model
6. Health Indicators and their use
7. Situation Analysis Approach
8. Instrument for Health Systems Analysis
9. Macro Health System: WHO model
10. Health Management Information System
11. Field Visits for data collection(applied system analysis)
12. Health system functions
13. Health system outcomes
14. Primary Health Care
15. Linking the Micro and Macro Health models

Recommended Readings:

1. Berman BA, Bossert TJ. A decade of health sector reform in developing countries: what have we learned? Boston, MA: Data for Decision Making Project, International Health Systems Group, Harvard School of Public Health; 2000. Available from: URL: <http://www.hsph.harvard.edu/ihs/publications/pdf/closeout.PDF>
2. Kemm J, Parry J, Palmer S (eds). Health impact assessment: concepts, theory, techniques and applications. Oxford: Oxford University Press; 2004.
3. Kielmann AA, Siddiqi S, Mwadime RK. District health planning manual: toolkit for district health managers. Islamabad, Pakistan: Multi-donor Support Unit, Ministry of Health; 2002.
4. Kielmann, AA, Janovsky K, Annett H. Assessing district health needs, services and

systems: protocols for rapid data collection and analysis. London, UK: Macmillan Education Ltd and AMREF, 1995.

5. Siddiqi S, Haq IU, Ghaffar A, Akhtar T, Mahaini R. Pakistan's maternal and child health policy: analysis, lessons and the way forward. *Health Policy* 2004;69: 117-30.

6. Siddiqi S, Kielmann AA, Khan MS, Ali N, Ghaffar A, Sheikh U, et. al. The effectiveness of patient referral in Pakistan. *Health Policy Plan.* 2001;16: 193-198.

7. Stevens A, Raftery J, Mant J, Simpson S (eds). *Health care needs assessment: the epidemiologically-based needs assessment reviews*, 2nd ed., vol. 2. Oxford: Radcliffe Medical Press; 1994.

8. World Health Organization. *The world health report 2000: Health systems – improving performance*. Geneva: World Health Organization; 2000. Available from: URL: http://www.who.int/entity/whr/2000/en/whr00_en.pdf

REPRODUCTIVE HEALTH

1. Basic concepts and landmark events related to reproductive health and its evolution

- Introduction to the course: Historical background of RH
- Life course perspective to RH
- ICPD, post ICPD, Beijing + 10
- Safe Motherhood and Continuum of Care

2. Reproductive behavior in Pakistan

3. Contraception as a preconceptional health intervention

4. Abortion as a public health issue

5. Antenatal and obstetrical care models

- Determinants of maternal mortality
- Measurement of maternal mortality
- Obstetrical care (EOC, EmOC, BOC)
- Unmet obstetrical need
- Delays in obstetrical care provision
- Integrated approach to newborn care

6. RH needs of special populations

- RH issues of adolescents and young adults
- RH needs of and issues for men
- Role of males in Safe Motherhood

7. Diseases of public health importance in RH, e.g.,

- Cancers of reproductive tract, STIs etc
- Cancers of breast

- Sexually transmitted infections
 - HIV AIDS
8. Health systems issues, e.g.
- Access to services at various levels
 - Role of the district health system in reproductive health
 - Role of the tertiary care hospital in reproductive health
 - Primary health care and reproductive health including community based interventions
9. Cross cutting themes, e.g., research, monitoring and evaluation, quality of care
- Evidence-based reproductive health interventions
 - Quality of care in RH
 - Integrated approach to provision of reproductive health services
 - Beyond numbers: Determinants of maternal mortality
10. Data sources in reproductive health:
- Websites
 - Reports, surveys and publications focusing on RH
 - RH programs at the district level by UNFPA
 - MIS in reproductive health

Recommended Readings:

1. Abou-Zahr CL, Wardlaw TM. Antenatal care in developing countries: promises achievements and missed opportunities: an analysis of trends, levels and differentials, 1990-2001. Geneva: World Health Organization; 2003. Published jointly by WHO and UNICEF. Available from: URL:
http://www.who.int/reproductive-health/docs/antenatal_care.pdf
2. Askew I, Berer M. The contribution of sexual and reproductive health services to the fight against HIV/AIDS: a review. *Reprod Health Matters*. 2003;11: 51-73.
3. Aube J, Toure I, Diagne M. Senegalese grandmothers promote improved maternal and child nutrition practices. *Soc Sci Med*. 2004;59: 945-59.
4. Bale JR, Stoll BJ, Lucas AO. Improving birth outcomes: meeting the challenge in the developing world. Washington, DC: National Academies Press; 2003.
5. Bertrand JT, Magnani RJ, Knowles JC. Handbook of indicators for family planning program evaluation. Chapel Hill, NC: The Evaluation Project; 1994. Available from: URL:
<http://www.cpc.unc.edu/measure/publications/pdf/ms-94-01.pdf>
6. Blanc AK, Curtis SL, Croft TN. Monitoring contraceptive continuation: links to fertility outcomes and quality of care. *Stud Fam Plann*. 2002;33: 127-40.
7. Bobadilla JL. Evaluation of maternal health programs: approaches, methods and indicators. *Int J Gynaecol Obstet*. 1992;38 (suppl.): S67-73.

8. Bruce J. Fundamental elements of quality of care: a simple framework. *Studies in Family Planning* 1990;21: 61-91.
9. Cleland J, Ali MM. Reproductive consequences of contraceptive failure in 19 developing countries. *Obstetrics & Gynecology* 2004;104: 314-320. Available from: URL: <http://www.greenjournal.org/cgi/reprint/104/2/314.pdf>
10. Cleland JG, Boerma JT, Carael M, Weir SS. Monitoring sexual behavior in general populations: a synthesis of lessons of the past decade. *Sexually Transmitted Infections*, 2004;80 (2 suppl.): ii1-7.
11. Creswell JW, Fetters MD, Ivankova NV. Designing a mixed methods study in primary care. *Annals of Family Medicine* 2004;2: 7-12.
12. Davies J. The reproductive health staircase. *NGORC Journal* 2004;5: 21. Available from: URL: <http://www.ngorc.org.pk/journal/Archive/Journal-Mar2004.pdf>
13. Douthwaite M, Ward P. Increasing contraceptive use in rural pakistan: an evaluation of the lady health worker program. *Health Policy Plan.* 2005;20: 117-123.
14. Geyoushi BE, Matthews Z, Stones RW. Pathways to evidence-based reproductive health care in developing countries. *BJOG: An International Journal of Obstetrics & Gynaecology* 2003;110: 500-507.
15. Gillespie DG. Whatever happened to family planning, and, for that matter, reproductive health? *Int Fam Plan Perspect.* 2004;30: 34-8. Available from: URL: <http://www.guttmacher.org/pubs/journals/3003404.html>
16. John Snow, Inc. Safe motherhood indicators: lessons learnt in measuring progress. *MotherCare Matters – A Quarterly Newsletter and Literature Review on Maternal and Neonatal Health and Nutrition* 1999;8: 1-26. Available from: URL: <http://mothercare.jsi.com/pubs/mcmatters/pdf/Vol8%201.pdf>
17. Johnston HB and Hill K. Induced abortion in the developing world: indirect estimates. *Inter Fam Plann Persp* 1996; 22: 108-114. Available from: URL: <http://www.guttmacher.org/pubs/journals/2210896.pdf>
18. Khalil L, Roudi-Fahimi F. Making motherhood safer in Egypt (MENA Policy Brief). Washington, DC: Population Reference Bureau; 2004. Available from: URL: http://www.prb.org/pdf04/MakMotherSaferEgypt_Eng.pdf
19. Koblinsky M. Essential obstetric care and subsets - basic and emergency obstetric care: what's the difference? *MotherCare Policy Brief #1*. Arlington, VA: John Snow, Inc.; 1999. Document no. M750. Available from: URL: http://www.jsi.com/intl/mothercare/pubs/PolicyBriefs/policy_brief1.htm
20. Koblinsky M. Safe motherhood indicators - measuring progress. *MotherCare Policy Brief #2*. Arlington, VA: John Snow, Inc.; 1999. Document no. M751. Available from: URL: http://www.jsi.com/intl/mothercare/pubs/PolicyBriefs/policy_brief2.htm
21. Koblinsky MA, Campbell O, Heichelheim J. Organizing delivery care: what works for safe motherhood? *Bull World Health Organ.* 1999;77: 399-406.

22. Koenig MA, Fauveau V, Chowdhury AI, Chakraborty J, Khan MA. Maternal mortality in Matlab, Bangladesh: 1976-1985. *Studies in Family Planning* 1988;19: 69-80.
23. Lush L. Service integration: an overview of policy developments. *International Family Planning Perspectives*, 2002;28: 71-76.
24. Marston C, Cleland J. The effects of contraception on obstetric outcomes. Geneva: Department of Reproductive Health and Research, World Health Organization; 2004. Available from: URL: <http://whqlibdoc.who.int/publications/2004/9241592257.pdf>
25. McCarthy J, Maine D. A framework for analyzing the determinants of maternal mortality. *Studies in Family Planning* 1992;23: 23-33.
26. Medicam. Technologies appropriate and inappropriate. *Safe Motherhood – A newsletter of worldwide activity* 1995;18.
27. Rashida G. Unwanted pregnancy and post-abortion complications in Pakistan: findings from a national study. Islamabad, Pakistan: Population Council. Available from: URL: http://bvs.insp.mx/temas/aborto/unwanted_pregnancy_and_postabortion_complications_in_pakistan.pdf
28. Seltzer JR. The origins and evolution of family planning programs in developing countries. Santa Monica: RAND; 2002.
29. Senlet P, Curtis SL, Mathis J, Raggars H. The role of changes in contraceptive use in the decline of induced abortion in Turkey. *Stud Fam Plann.* 2001 Mar;32: 41-52.
30. Shelton JD, Fuchs N. Opportunities and pitfalls in integration of family planning and HIV prevention efforts in developing countries. *Public Health Rep.* 2004;119: 12-5.
31. Sibley L, Sipe TA, Koblinsky M. Does traditional birth attendant training improve referral of women with obstetric complications: a review of the evidence. *Soc Sci Med.* 2004;59: 1757-68.
32. Siddiqi S, Haq IU, Ghaffar A, Akhtar T, Mahaini R. Pakistan's maternal and child health policy: analysis, lessons and the way forward. *Health Policy.* 2004;69: 117-30.
33. Sullivan TM, Bertrand JT (eds). Monitoring quality of care in family planning by the quick investigation of quality (QIQ) country reports. Chapel Hill: Carolina Population Center, University of North Carolina; 2000. MEASURE Evaluation and Technical Report Series, No. 5. Available from: URL: <http://www.cpc.unc.edu/measure/publications/pdf/tr-00-05.pdf>
34. Thaddeus S, Maine D. Too far to walk: maternal mortality in context. *Soc Sci Med.* 1994;38: 1091-110.
35. The MEASURE Program. Investing in population, health and nutrition monitoring and evaluation: lessons learned. *MEASURE Evaluation Bulletin* 2003;5. Available from: URL: <http://www.cpc.unc.edu/measure/publications/pdf/bu-03-05.pdf>
36. Tobin GA, Begley CM. Methodological rigor within a qualitative framework. *Journal of Advanced Nursing* 2004;48: 388-396. Available from: URL: <http://www.ruralhealth.utas.edu.au/gr/resources/docs/tobin-and-begley-rigour.pdf>
37. Trussell J, Ellertson C, Stewart F, Raymond EG, Shochet T. The role of emergency

- contraception. Am J Obstet Gynecol 2004;190(4 suppl.): S30-8.
38. UNAIDS. The public health approach to STD control: UNAID technical update (UNAID best practices collection). Geneva: World Health Organization; 1998. Available from: URL: http://www.who.int/entity/hiv/pub/sti/en/stdcontrol_en.pdf
39. UNDP, UNFPA, WHO, World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP). WHO's work in reproductive health: the role of the Special Programme. Progress in Human Reproductive Research 1997;(42): 1-8. Available from: URL: <http://www.who.int/reproductive-health/hrp/progress/42/prog42.pdf>
40. Varga CA. Pregnancy termination among south African adolescents. Studies in Family Planning 2002;33: 283-98.
41. World Health Organization. Care in normal birth: a practical guide – report of a technical working group. Geneva: Division of Reproductive Health, World Health Organization; 1997. Document no. WHO/FRH/MSM/96.24. Available from: URL: http://www.who.int/reproductivehealth/publications/MSM_96_24/care_in_normal_birth_practical_guide.pdf
42. World Health Organization. Reproductive health strategy: to accelerate progress toward the attainment of international development goals and targets. Geneva: World Health Organization; 2004. Available from: URL: <http://www.who.int/reproductivehealth/publications/strategy.pdf>
43. World Health Organization. Syndromic case management of sexually transmitted diseases: a guide for decision-makers, health care workers, and communicators. Manila, Philippines: WHO Regional Office for the Western Pacific; 1997. Available from: URL: http://www.cadre.org.za/BAC/BACpdf/WHO_STD.pdf
44. Zlidar VM, Gardner R, Rutstein SO, Morris L, Goldberg H, Johnson K. New survey findings: the reproductive revolution continues. Population Reports, Series M, No. 17. Baltimore, MD: INFO Project, Johns Hopkins Bloomberg School of Public Health; 2003. Available from: URL: <http://www.infoforhealth.org/pr/m17/m17.pdf>

HEALTH PLANNING

1. District Health System and Devolution
2. Introduction to Health Planning and Budgeting
3. The Planning Cycle and its steps
4. Essential Content of a district Health Plan Document
5. Glossary of Terms used in district Health Planning

Recommended Readings:

1. Green A. An introduction to health planning in developing countries, 2nd ed. Oxford: Oxford University Press; 1999.
2. Kielmann AA, Siddiqi S, Mwadime RK. District health planning manual: toolkit for district health managers. Islamabad, Pakistan: Multi-donor Support Unit, Ministry of Health; 2002.
3. Kielmann, AA, Janovsky K, Annett H. Assessing district health needs, services and systems: protocols for rapid data collection and analysis. London, UK: Macmillan Education Ltd and AMREF; 1995.
4. Newell K. The way ahead for district health systems. World Health Forum. 1989;10: 80-7.
5. Reinke WA. Health planning for effective management. New York, NY: Oxford University Press; 1988.
6. Van Lerberge W, Lafort Y. The role of the hospital in the district. Deliverin or supporting primary health care? Current concerns. WHO SHS Paper 1990;2: 1-36.
7. World Health Organization. Making it work: organization and management of district health systems based on primary health care. Geneva: World Health Organization; 1988. Document no. WHO/SHS/DHS/88.1.
8. World Health Organization. The challenge of implementation: district health systems for primary health care. Geneva: World Health Organization; 1988. Document no. WHO/SHS/DHS/88.1/rev 1. Available from: URL: http://whqlibdoc.who.int/hq/1988/who_shs_DHS_88.1_Rev.1.pdf
9. World Health Organization. The health centre in district health systems. Geneva: World Health Organization; 1994. Document no. WHO/SHS/DHS/94.3.

COMMUNICABLE & NON-COMMUNICABLE DISEASE CONTROL

1. Introduction to Communicable and Non-communicable Diseases: concepts and strategies
2. Epidemiology of communicable diseases: Basic Concepts
3. Surveillance
4. Outbreak Investigation
5. Polio Eradication: New challenges and strategies
6. Biological principles for the development of disease prevention and control or management programmes, including immunology
7. Burden of Diseases
8. Communicable and Non-Communicable Diseases Trends and Policies
9. Private Public Partnership in disease control: Integration of non-communicable disease prevention and control within the context of primary and secondary health care

10. Role of NGOs in disease control
11. Disease Early Warning System
12. Epidemiology of Genetics and its role in Communicable and Non-communicable diseases
13. Epidemiology of Genetics and its role in Communicable and Non-communicable diseases
14. Epidemiology of NCDs in Pakistan
15. The National Action Plan for NCD prevention, control and health promotion: concepts, theory and practice

Recommended Readings:

1. Bender AP, Williams AN, Johnson RA, Jagger HG. Appropriate public health responses to clusters: the art of being responsibly responsive. *Am J Epidemiol* 1990;132: S48-52.
2. Benenson AS. Control of communicable diseases in man, 15th ed. Washington DC: American Public Health Association; 1990.
3. Caldwell GG. Twenty-two years of cancer cluster investigations at the Centres for Disease Control. *Am J Epidemiol* 1990;132: S43-7.
4. Dicker RC, et. al. Principles of epidemiology: an introduction to applied epidemiology and biostatistics, 2nd ed. Atlanta, GA, USA: Centers for Disease Control and Prevention, 1992. Self-study course 3030-G. Available from: URL: http://www.phppo.cdc.gov/PHTN/catalog/pdf-file/Epi_Course.pdf
5. Fiore BJ, Hanrahan LP, Anderson HA. State health department response to disease cluster reports: a protocol for investigation. *Am J Epidemiol* 1990;132: S14-22.
6. Fraser DW, Tsai TY, Orenstein W. Legionnaires' disease: description of an epidemic of pneumonia. *N Engl J Med* 1977;297: 1189-97.
7. Gross M. Oswego Country revisited. *Public Health Rep* 1976;91: 168-70.
8. Hertzman PA, Blevins WL, Mayer J, Greenfield B,ting M,Gleich GJ.Association of the eosinophilia-myalgia syndrome with the ingestion of tryptophan. *N Engl J Med* 1990;322: 869-73
9. Hutchins SS, Markowitz LE, Mead P. A school-based measles outbreak:the effect of a selective revaccination policy and risk factors for vaccine failure. *Am J Epidemiol* 1990;132: 157-68.
10. Jamison DT, Mosley HW, Measham AR, Bobadilla JL. Disease control priorities in developing countries. New York, NY: Oxford University Press; 1993
11. Khan OA, Hyder AA. Research report-Responses to an emerging threat: HIV/AIDS policy in Pakistan. *Health Policy Plan.* 2001;16(2):214-218
12. Kuh D, Ben-Shlomo Y (eds). *A Life Course Approach to Chronic Disease Epidemiology.* Oxford: Oxford Medical Publications; 1997.
13. MacDonald KL, Spengler RF, Hatheway CL. Type A botulism from sautéed onions. *J Am Med Assoc.* 1985;253:1275-8.

14. Ministry of Health, Government of Pakistan, World Health Organization, Heartfile. National action plan for prevention and control of non-communicable diseases and health promotion in Pakistan: a public-private partnership in health. Islamabad, Pakistan: tripartite collaboration of the Ministry of Health, Government of Pakistan; WHO, Pakistan office, and Heartfile; 2004. Available from: URL: <http://www.heartfile.org/pdf/NAPmain.pdf>
15. Murray CJL, Lopez AD. Mortality by cause for eight regions of the world: Global Burden of Disease Study. *Lancet* 1997; 349:1269-76
16. Murray CJL, Lopez AD. Regional patterns of disability-free life expectancy and disability-adjusted life expectancy: Global Burden of Disease Study. *Lancet* 1997; 349:1347-52.
17. Neutra RR. Counterpoint from a cluster buster. *Am J Epidemiol* 1990;132: 1-8.
18. Nishtar S. Cardiovascular disease prevention in low resource settings: lessons from the Heartfile experience in Pakistan. *Ethn Dis.* 2003 Summer;13(2 suppl. 2):S138-48.
19. Nishtar S. Prevention of coronary heart disease in South Asia. *Lancet* 2002 Sep;360: 1015-18.
20. Nishtar S. Public-private partnerships in health: a global call to action. *Health Res Poliy Syst* 2004 Jul;2(1): 5.
21. Omran AR. The epidemiology transition theory revisited thirty years later. *Wld hlth statist.quart.* 1998;99-119.
22. Rosenberg MD, Hazlet KK, Schaefer J, Wells JG , Pruneda RC. Shigellosis from swimming. *J Am Med Assoc.* 1976;236: 1849-52.
23. Ryan CA , Nickels MK, Hargrett-Bean NT. Massive outbreak of antimicrobial-resistant salmonellosis traced to pasteurized milk. *J Am Med Assoc.* 1987;258: 3269-74.
24. Schulte PA, Ehrenberg RL, Singal M. Investigation of occupational cancer clusters: theory and practice. *Am J Public Health* 1987;77: 52-6.
25. Taylor DN, Wachsmuth IK, Shangkuan Y-H. Salmonellosis associated with marijuana: a multistate outbreak traced by plasmid fingerprinting. *New Engl J Med* 1982;306:1249-53.
26. Webber R. Communicable disease epidemiology and control: a global perspective, 2nd ed. Wallingford: CABI Publishing; 1996.

HEALTH PROMOTION

1. Introduction to Health Promotion and Education
 - Health promotion
 - Risk transition
 - Ottawa Charter
 - Adelaide, Sundsvall, Jakarta and Mexico, Bangkok conferences
 - Life course perspective
 - World Health Report 2002

2. Health perspectives and reflections

- Health as a continuum
- Approaches to Health Education
- Orientations for health education

3. Evidence-based Health Promotion and Planning

- Principles of Health Promotion
- Hierarchy of evidence
- Outcome model of Health Promotion
- A new evidence-based paradigm

2. Health perspectives and reflections

- Health as a continuum
- Approaches to Health Education
- Orientations for health education

3. Evidence-based Health Promotion and Planning

- Principles of Health Promotion
- Hierarchy of evidence
- Outcome model of Health Promotion
- A new evidence-based paradigm

6. Models of Health Promotion Planning

- PRECEDE-PROCEDE
- Social Marketing
- Logic Model

7. Health Communication

- Types and levels
- Principles of effective communication
- Message
- Audience
- HEALTHCOMS 5 step methodology
- CDC's Health Communication Wheel

- "A" frame of advocacy

- 7 C's of effective communication

- "P" process

- Health Communication campaign

- Planning a comprehensive health communication campaign

8. Steps of the comprehensive health communication campaign

- Steps of the comprehensive health communication campaign

9. Social Marketing

10. Evaluating Health Promotion Programs

- Stages of research and evaluations for Health Promotion programs

- Best practices in health promotion
- Skills for evaluation
- Steps off evaluation process

Recommended Readings:

1. Elder JP. Behavior change and public health in the developing world. Thousand Oaks, CA: SAGE; 2001.
2. Ewles L, Simmet I. Promoting health: a practical guide, third edition. London: Scutari Press; 1995.
3. Green LW, Kreuter MW. Health promotion planning: an educational and environmental approach, 2nd ed. Mountain View, CA: Mayfield Publishing Company; 1991.
4. Naidoo J, Wills J. Health promotion: foundations for practice, 2nd ed. London: Bailliere Tindall; 1994.
5. Rogers EM, Kincaid DL. Communication networks: towards a new paradigm for research. New York, NY: The Free Press; 1981.
6. Rogers EM. Diffusion of innovations, 3rd ed. New York, NY: The Free Press; 1983.
7. Valente TW. Evaluating health promotion programs. New York, NY: Oxford University Press; 2002.
8. World Health Organization. Education for health: a manual on health education in primary health care. Geneva: World Health Organization; 1988

HEALTH SYSTEMS MANAGEMENT

1. Introduction to Health System and Scope of Health Systems
2. Managing Health System for Better Outcomes, Global Issues and Priorities for Pakistan
3. Management: Traditional and Contemporary Issues and Challenge
4. Management and the Manager's Job
5. An Introduction to Systems, Client Orientation, Process Analysis, Problem Identification
6. Evidence-based decision making
7. Use of HMIS in HSM
8. Supportive supervision & leadership
9. Capacity building in human resource management
10. Introduction to Human Resource Management: Competencies and Job Description
11. Challenges resolution techniques, staff motivation and performance appraisal
12. Functional and Task Analysis
13. Functional and Task Analysis: Exercise
14. Monitoring and Evaluation
15. Introduction to Financial Management

16. Performance Budgeting and Analysis in HSM
17. Financial Management in HSM
18. Financial Management in HSM: Exercise
19. Logistics Cycle in HSM
20. Quality Management
21. Quality Management: Exercise
22. Tools for Quality Assessment / improvement
23. Tools for Quality Assessment / improvement: Exercise

Recommended Readings:

1. Amonoo-Lartson R, Ebrahim GJ, Lovel HJ. District health care: challenges for planning, organization and evaluation in developing countries, 2nd ed. Hong Kong: Macmillan Press; 1985.
2. Chanawongse K. Understanding primary health care management: from theory to practical reality. Bangkok: Buraphasilp Press; 1990.
3. Gourlay R. Training manual on health manpower management (8 volumes). Geneva: Division of Health Manpower Development, World Health Organization; 1988. Document no. WHO/EDUC/88.195.
4. McMahan R, Barton E, Ross F. On being in charge: a guide to management in primary health care, 2nd ed. Geneva: World Health Organization; 1992.
5. Reinke WA. Health planning for effective management (HPEM). New York, NY: Oxford University Press; 1988.
6. Shortell SM, Kaluzny AD. Health care management, 3rd ed. Albany, NY: Thompson Delmar Learning; 2000.
7. World Health Organization. The world health report 2000: Health systems – improving performance. Geneva: World Health Organization; 2000. Available from: URL: http://www.who.int/entity/whr/2000/en/whr00_en.pdf

CHILD HEALTH

1. Introduction to Child Health
2. Child Health: The Public Health Perspective
3. Assessing newborn health: The Neonatal Survival
4. Assessment of child health using different tools in Epidemiology, Biostatistics and Pediatrics

5. Child Health: The Programmatic Issues in the contextual framework.
6. Strengthening the Health Systems For Child Health
7. Child Health: Global Issues

Recommended Readings:

1. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet*. 2003;361: 2226-34. Available from: URL: http://www.who.int/child-adolescenthealth/New_Publications/CHILD_HEALTH/CS/CS_paper_1.pdf
2. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS; Bellagio Child Survival Study Group. How many child deaths can we prevent this year? *Lancet*. 2003;362: 65-71.
3. Bryce J, el Arifeen S, Pariyo G, Lanata C, Gwatkin D, Habicht JP; Multi-Country Evaluation of IMCI Study Group. Reducing child mortality: can public health deliver? *Lancet*. 2003;362: 159-64.
4. Victora CG, Wagstaff A, Schellenberg JA, Gwatkin D, Claeson M, Habicht JP. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet*. 2003;362: 233-41.
5. Claeson M, Gillespie D, Mshinda H, Troedsson H, Victora CG; Bellagio Study Group on Child Survival. Knowledge into action for child survival. *Lancet*. 2003;362: 323-7. Available from: URL: http://www.who.int/child-adolescenthealth/New_Publications/CHILD_HEALTH/CS/CS_paper_5.pdf
6. Bawaskar HS. The world's forgotten children [editorial]. *Lancet*. 2003;361: 1224-5.
7. Lawn JE, Cousens S, Zupan J; Lancet Neonatal Survival Steering Team. 4 million neonatal deaths: when? Where? Why? *Lancet*. 2005;365: 891-900.
8. Darmstadt GL, Bhutta ZA, Cousens S, Adam T, Walker N, de Bernis L; Lancet Neonatal Survival Steering Team. Evidence-based, cost-effective interventions: how many newborn babies can we save? *Lancet*. 2005;365: 977-88
9. Knippenberg R, Lawn JE, Darmstadt GL, Begkoyian G, Fogstad H, Walelign N, Paul VK; Lancet Neonatal Survival Steering Team. Systematic scaling up of neonatal care in countries. *Lancet*. 2005;365: 1087-98.
10. Martines J, Paul VK, Bhutta ZA, Koblinsky M, Soucat A, Walker N, Bahl R, Fogstad H, Costello A; Lancet Neonatal Survival Steering Team. Neonatal survival: a call for action. *Lancet*. 2005;365: 1189-97. Available from: URL: http://www.who.int/child-adolescenthealth/New_Publications/NEONATAL/The_Lancet/Neonatal_paper_4.pdf
11. Tinker A, ten Hoop-Bender P, Azfar S, Bustreo F, Bell R. A continuum of care to save newborn lives [comment]. *Lancet*. 2005;365: 822-5. Available from: URL:

[http://www.who.int/child-](http://www.who.int/child-adolescenthealth/New_Publications/NEONATAL/The_Lancet/2_The_Partnerships.pdf)

[adolescenthealth/New_Publications/NEONATAL/The_Lancet/2_The_Partnerships.pdf](http://www.who.int/child-adolescenthealth/New_Publications/NEONATAL/The_Lancet/2_The_Partnerships.pdf)

12. Zaidi A, Khan T, Akram D. Early child health and survival strategies in Pakistan: a situational

analysis. In: Bhutta ZA (ed). Maternal and child health in Pakistan: challenges and opportunities. Karachi: Oxford University Press; 2004.

13. Bhutta ZA, Ali N, Hyder A, Wajid A. Perinatal and newborn care in Pakistan: seeing the unseen. In: Bhutta ZA (ed). Maternal and child health in Pakistan: challenges and opportunities. Karachi: Oxford University Press; 2004.

14. Siddiqi S, Haq IU, Ghaffar A, Akhtar T, Mahaini R. Pakistan's maternal and child health policy: analysis, lessons and the way forward. Health Policy 2004;69: 117-30.

SEMESTER 3

HEALTHCARE FINANCING

1. Basic Economic concepts and tools.

- Definitions: Economics, Macro & Microeconomics, economic systems,
- Goals of an economic system,
- Efficiency (technical, allocative)
- Equity
- Demand & Supply
- Price, Market forces, Price equilibrium
- Types of Goods, Public, Private, Externalities, Opportunity cost
- Production Theory
- Markets, competition, oligopoly, monopoly

2. Health & Economic Development

- GNP, GDP;
- Inflation,
- Health & economic Indicators

3. Cost Concepts

- Unit Cost Analysis (Step down approach)
- Costing for Intervention Package for Health Care

4. Economic Analysis of Health Sector Projects

- Cost Benefit,
- Cost Utility,
- Cost Effectiveness;

- Summary Measures for Health
 - Average and Marginal Cost analysis
5. Health Care Financing
- Overview of Health Care Financing Concepts in Developing Countries
 - Equity and Financial Fairness/HCF for Poor
 - Economic development and resource allocation: Out of Pocket vs. Government: Development- Non Development; Health Sector Reforms
 - Social Health Insurance
 - Private Health Insurance
 - Community Financing
 - User fees
 - Provider Payment Method
 - Health Insurance Implementation In Pakistan
 - Health Insurance & Islam
 - National Health Accounts
6. Health and Markets
- Health and Markets: Application of market concepts to Health
 - Why Health is a case of Market Failure
 - Government and Health Care
 - Managed Care
7. Globalization of Health
- The International Health Market: Providers, Purchasers, Pharmaceuticals
 - Priority Setting in Developing countries
 - International Resource flows: Developing countries & Health

Recommended Readings:

1. Creese A, Parker D (eds). Cost analysis in primary health care: a training manual for programme managers. Geneva: World Health Organization in collaboration with the United Nations Children's Fund and the Aga Khan Foundation; 1994.
2. Donaldson C, Gerard K. Economics of health care financing: the visible hand, 2nd edition. Basingstoke, UK: Palgrave Macmillan; 2004.
3. Drummond M, McGuire A. Economic evaluation in health care: merging theory with practice. New York, NY: Oxford University Press; 2001.
4. Drummond MF, O'Brien B, Stoddart GL, Torrance GW. Methods for the economic evaluation of health care programmes, 2nd ed. Oxford: Oxford University Press; 1997.
5. Feldstein PJ. Health care economics. New York, NY: John Wiley & Sons, Inc; 1979.
6. Gold MR, Siegel JE, Russel LB, Weinstein MC (eds). Cost effectiveness in health and

- medicine. New York, NY: Oxford University Press; 1996.
7. Government of Pakistan. Economic survey of Pakistan 2005-2006. Islamabad, Pakistan: Government of Pakistan, Finance Division; 2006. Available from: URL: <http://www.finance.gov.pk/survey/home.htm>
 8. McDonald R. Using health economics in health services: rationing rationally? Buckingham: Open University Press; 2002.
 9. McPake B, Kumaranayake L, Normand C. Health economics: an international perspective. London, UK: Routledge Publishers; 1997.
 10. Mills A, Lee K. Health economics research in developing countries. Oxford: Oxford University Press; 1993
 11. Mishan EJ. Cost-benefit analysis: an informal introduction, 4th ed. London, UK: Unwin Hyman Ltd; 1988.
 12. Preker AS, Carrin G. Health financing for poor people: resource mobilization and risk sharing. Washington DC: The World Bank; 2004.
 13. Spasoff RA. Epidemiologic methods for health policy. New York, NY: Oxford University Press; 1999.
 14. Witter S, Ensor T, Jowett M, Thompson R. Health economics for developing countries: a practical guide. London, UK: Macmillan Education Ltd; 2000.
 15. World Health Organization. Macroeconomics and health: investing in health for economic development – report of the Commission on Macroeconomics and Health, World Health Organization. Geneva: World Health Organization; 2001. Available from: URL: <http://whqlibdoc.who.int/publications/2001/924154550X.pdf>
 16. Zaidi SA. Issues in Pakistan's economy. Karachi, Pakistan: Oxford University Press; 1998.
 17. Zaidi SA. The political economy of health care in Pakistan. Karachi, Pakistan: Vanguard Books (Pvt.) Ltd; 1988.

APPLIED NUTRITION

1. Normal nutrition

- Fundamental elements of human nutrition
- Nutrition during growth and health
- Nutritional requirements of neonates and infants 0-6 months
- Nutrition requirements of infants 6-12 months
- Nutrition requirements of children 1-5 years
- Nutrition requirements of children 5-12 years
- Nutrition requirements during physiological stress
- Nutrition requirements of adolescents
- Nutrition requirements during pregnancy
- Nutrition requirements during lactation

- Household food safety

2. Assessment of Growth and Nutritional status of children:

- Nutritional status: its assessment by field techniques
- Nutritional status: Its assessment through anthropometry
- Using Growth Charts as primary health care tool

3. Nutritional Prescription for children

- 6-12 months of age
- 12 months - 5 years of age
- 5 - 12 years of age
- Nutritional prescription of the mothers during normal health, pregnancy and lactation

4. Human milk and its importance:

- Advantages of breastfeeding
- Dangers and Disadvantages of bottlefeeding
- Exclusive breastfeeding
- Continued breastfeeding
- Complimentary feeding
- Breastmilk substitutes

- Lactation failure
- Promotion and support of breastfeeding
- Management of lactation problems
- Perceived insufficiency of breastmilk

5. Malnutrition

- Classification of Malnutrition
- Causes of Malnutrition
- Risk factors and their assessment
- Management of Malnutrition

6. Clinical Assessment of Malnutrition

- Protein energy malnutrition: Marasmus, PEM, Kwashiorkor
- Vitamin A deficiency
- Iron deficiency
- Iodine deficiency

7. Health Education

- Nutrition education and communication skills
- Nutritional counselling
- Nutritional and social rehabilitation

8. Management of Malnutrition

- Management of nutritional deficiencies at macrolevel
- Management of nutritional deficiencies at microlevel

9. Nutrition during special circumstances

- Management when mother is ill to breastfeed
- Nutrition during illness and convalescence (during diarrhoea and respiratory infections)

10. National Nutrition Programmes

- Establishing a nutrition clinic
- Establishing a Lactation Management clinic
- Monitoring and Evaluation of nutrition intervention programmes
- National Nutrition Surveys
- Nutrition in IMCI
- Breastfeeding Policy (International Code for Breastfeeding)
- Expanded Programme for childhood illnesses and Nutrition
- IDD control programme

11. Nutrition for children living in special situation:

- Poverty
- War
- Natural calamities
- AIDS

12. Food safety

- Storage and Preservation of Foods at local and industrial level

Recommended Readings:

1. Allen LH. Nutritional influences on linear growth: a general review, *Eur J Clin Nutr* 1994;48(suppl 1): 75-89.
2. Ashraf RN, Jalil F, Khan SR, Zaman S, Karlberg S, Lindblad BS, Hanson LÅ. Early child health in Lahore, Pakistan: V. Feeding patterns. *Acta Paediatr* 1993;390(suppl.): S48-62.
3. Ashraf RN, Jalil F, Zaman S, Karlberg J, Khan SR, Lindblad BS, Hanson LÅ. Breast feeding and protection against neonatal sepsis in a high risk population. *Arch Dis Child* 1991;66: 488-90.
4. Atkinson SA, Hanson LA, Chanrda RK (eds). *Breastfeeding, nutrition, infection and infant growth in developed and emerging countries*. Newfoundland, Canada: ARTS Biomedical Publishers and Distributors; 1990.
5. Brown KH, Black RE, Lopez de Romana G, Creed de Kanashiro H. Infant feeding practices and their relationship with diarrhoeal and other diseases in Huascar (Lima), Peru. *Pediatr* 1989;83: 31-40.
6. Cohen RJ, Brown KH, Canahuati J, Rivera LL, Dewey KG. Determinants of growth from birth to 12 months among breast fed Honduran infants in relation to age of introduction of complementary foods, *J Pediatr* 1995;96:504-10.

7. de Onis M, Blössner M. World Health Organization Global Database on Child Growth and Malnutrition. Geneva: Programme of Nutrition, World Health Organization; 1997. Available from: URL: <http://www.who.int/nutgrowthdb/database/en>
8. Dewey KG, Heinig MJ, Nommsen LA, Peerson JM, Lonnerdal B. Breastfed infants are leaner than formula-fed infants at 1 year of age: the DARLING study. *Am J Clin Nutr* 1993;57: 140-5.
9. Dewey KG. Infant nutrition in developing countries: what works [comment]? *Lancet*, 2005 28-Jun 3;365: 1832-4.
10. Diaz S, Herreros C, Aravena R, Casado ME, Reyes MV, Schiappacasse V. Breast feeding duration and growth of fully breast fed infants in a poor urban Chilean population. *Am J Clin Nutr* 1995;62: 371-6.
11. Gross R, Kielmann A, Korte R, Schoeneberger H, Schultink W. Guidelines for nutrition baseline surveys in communities. Jakarta: SEAMEO, TROPMED, GTZ; 1997.
12. Hanson LÅ, Ashraf R, Zaman S, Karlberg J, Khan SR, Lindblad B, et al. Breastfeeding is a natural contraceptive and prevents disease and death in infants, linking infant mortality and birth rates. *Acta Paediatr* 1994 Jan;83: 3-6.
13. Hanson LÅ, Ashraf R, Zaman S, Karlberg J, Lindblad BS, Jalil F. Breast feeding is a natural contraceptive and prevents disease and death in infants, linking infant mortality and birth rates. *Acta Paediatr* 1994;83: 3-6.
14. Hanson LÅ, Carlsson B, Jalil F, Hahn-Zoric M, Karlberg J, Mellander L, Khan SR, Murtaza A, Thiringer K, Zaman S. Antiviral and antibacterial factors in human milk. In: Hanson LÅ (ed). *The biology of human milk*, vol. 15. New York, NY: Nestle Nutrition Workshop Series, Raven Press; 1989. p. 141-157.
15. Hanson LÅ, Carlsson B, Zaman S, Adlerberth I, Mattsby Baltzer I, Jalil F. The importance of breastfeeding in host defense: production of the milk antibodies and the antiinflammatory function of human milk. *Pak Paed J* 1992;XV: 155-164.
16. Hanson LÅ, Silfverdal SA, Stromback L, Erling V, Zaman S, Olcen P, Telemo E. The immunological role of breast feeding. *Pediatr Allergy Immunol* 2001;12 Suppl 14: 15-9.
17. Hanson LÅ. *Immunobiology of human milk: how breastfeeding protects babies*. Amarillo, TX, USA: Pharmasoft Publ; 2004
18. Karlberg J, Ashraf RN, Saleemi MA, Yaqoob M, Jalil F. Early child health in Lahore, Pakistan: XI. Growth. *Acta Paediatr* 1993;390 (suppl): 119-49.
19. Karlberg J, Zaman S, Hanson LÅ, Khan SR, Lindblad BS, Jalil F. Aspects of infantile growth and the impact of breastfeeding: a case control study of the infants from four socioeconomically different areas in Pakistan. *Hum Lactat* 1990;4: 219-47.
20. Pakistan Demographic and Household Survey, 1990-1994. Pakistan Institute of Population studies and Govt of Pakistan, 1994.
21. Pelto GH, Santos I, Goncalves H, Victora CG, Martines J, Habicht JP. Nutrition counseling

- training changes physician behavior and improves caregiver knowledge acquisition. *J Nutr* 2004; 134: 357–362.
22. Penny ME, Creed-Kanashiro HG, Robert RC, Narro MR, Caulfield LE, Black RE. Effectiveness of an educational intervention delivered through the health services to improve nutrition in young children: a cluster-randomised controlled trial. *Lancet* 2005 28-Jun 3;365: 1863-72
23. Saleemi MA, Ashraf RN, Mellander L, Zaman S. Determinants of stunting at 6, 12, 24 and 60 months and postnatal linear growth in Pakistani children. *Acta Paediatr* 2001;90: 1304-8.
24. Tulchinsky TH, El Ebweini S, Ginsberg G, Abed Y, Montano-Cuellar D, Schoenbaum M, et al. Growth and nutrition patterns of infants associated with a nutrition education and supplementation program in Gaza, 1987-92. *Bull WHO* 1994;72: 869-75.
25. Victora CG, Smith PG, Vaughan JP, Nobre LC, Lombardi C, Teixeira AM, et. al. Evidence for protection by breast-feeding against infant deaths from infectious diseases in Brazil. *Lancet* 1987;2: 319-22.
26. WHO Collaborative Study Team. Effect of breastfeeding on infant and child mortality due to infectious diseases in less developed countries: a pooled analysis, *Lancet* 2000;355: 451-55.
27. World Health Organization, UNICEF. Global strategy for infant and young child feeding. Geneva: World Health Organization; 2003. Available from: URL: http://www.who.int/child-adolescenthealth/New_Publications/NUTRITION/gs_iycf.pdf
28. World Health Organization. Effect of breastfeeding on infant and child mortality due to infectious diseases in less developed countries: a pooled analysis. WHO Collaborative Study Team on the Role of Breastfeeding on the Prevention of Infant Mortality. *Lancet* 2000 5;355: 451-5
29. World Health Organization. Management of severe malnutrition: a manual for physicians and other senior health workers. Geneva: World Health Organization; 1999. Available from: URL: <http://whqlibdoc.who.int/hq/1999/a57361.pdf>
30. World Health Organization. Management of the child with a serious infection or severe malnutrition: guidelines for care at the first-referral level in developing countries. Geneva: Department of child and adolescent health and development, World Health Organization; 2000. WHO document WHO/FCH/CAH/00.1. Available from: URL: http://www.who.int/child-adolescenthealth/publications/referral_care/Referral_Care_en.pdf
31. World Health Organization. Measuring change in nutritional impact of supplementary feeding programme for vulnerable groups. Geneva: World Health Organization; 1983.
32. Zaman S, Jalil F, Saleemi MA, Mellander L, Ashraf RN, Hanson LA. Changes in feeding patterns affect growth in children 0-24 months of age living in socioeconomically different areas of Lahore, Pakistan. *Adv Exp Med Biol* 2002;503: 49-56.

HOSPITAL MANAGEMENT

1. Hospital System and its Role, Components of a Hospital System & Role of Hospitals in PHC
2. Vision, Mission, Goals and Values of a Hospital
3. Role and Functions of Hospital Managers
4. Hospital Services Management
 - Nursing Management
 - Change Management
 - Infrastructure Management
5. Inventory Management
6. Drugs Management in Hospitals-I and II
7. Human Resource Management
8. Financial Management
 - Accounting rules and practices in a public & Private Hospital
 - Financial Management
 - Hospital Financing for Sustainability
 - Cost Containment, cost effectiveness and profitability
 - Costing and Cost implications of Hospital Services
9. RAP Tool
 - Introduction to Rapid Appraisal Tool for assessment of Emergency of a Hospital
 - Data Collection in Hospitals using RAP Tool
10. Preparing a Hospital Budget
11. Hospital Waste Management and infection control
 - Hospital Environment & Hospital Waste Management
 - Hospital Environment-related issues: lighting, ventilation, cleanliness and tidiness, horticulture and greenery, clean, regular and safe water supply, standards of personal hygiene, control measures for hospital associated infections
12. Accident & Emergency /Trauma Management Services
13. Human Resource Management
 - Human Resource Development: current status and future challenges
14. Infrastructure Management
 - Hospital Planning and Design
 - TQM and Medical Audit of the Hospital.
 - Total Quality Management: key concepts and Introduction to some basic tools of TQM
 - Hospital Purchasing Process

- Hospital Purchase, Tendering and Processing
15. Hospital Ethical Concerns

Recommended Readings:

1. Barnum H, Kutzin J. Public hospitals in developing countries: resource use, cost, financing. Baltimore, MD: Johns Hopkins University Press; 1993.
2. Blanchet KD, Switlik MM. The handbook of hospital admitting management. USA: Aspen Publications; 1985.
3. Goel SL, Kumar R. Management of hospitals. New Dehli, India: Deep and Deep Publications; 2002.
4. King M, Lapsley I, Mitchell F, Moyes J. Activity based costing in hospitals: a case study investigation. London, UK: Chartered Institute of Management Accountants; 1994.
5. McMahon R, Barton E, Piot M, Gelina N, Rose F. On being in charge. Geneva: World Health Organization; 1992.
6. Preker AS, Harding A (eds). Innovations in health service delivery: the corporatization of public hospitals, vol. 1. Washington DC: World Bank; 2002.
7. Shepard DS, Hodgkin D, Anthony Y. Analysis of hospital costs in developing countries: a manual for managers. Waltham, MA: Institute for Health Policy, Brandeis University; 1997.
8. Willan JA. Hospital management in the tropics and subtropics. London, UK: Macmillan Education Ltd, 1990.
9. World Health Organization. The hospital in rural and urban districts: report of a WHO study group on the functions of hospitals at the first referral level. World Health Organ Tech Rep Ser. 1992;819: 1-74

COMMUNITY BASED REPRODUCTIVE HEALTH INTERVENTIONS

1. RH at the community, household and individual levels
2. Overview of effective community-level interventions for RH
3. Planning community needs assessment to cover:
 - Significance of reproductive health needs in the community
 - Background of community
 - Specific aims
4. Selecting data collection methods, including
 - Focus group discussions
 - In-depth/key informant interviews

- Record review
 - Facility assessment
 - Client exit interview
 - Community-level rapid assessment survey
5. Design of a community-based RH intervention to respond to identified needs
- Rationale for expected effectiveness
 - Targeted beneficiaries
 - Types of intervention activities
 - Implementation plan and schedule, including budget
 - Expected outcomes and measures
 - Potential barriers to implementation
 - Monitoring and evaluation plans

Recommended Readings:

1. Abel-Smith B. An introduction to health: policy, planning and financing. London: Longman Group Ltd; 1994.
2. Afsar HA, Younus M, Gul A. Outcome of patient referral made by the lady health workers in Karachi, Pakistan. *J Pak. Med Ass* 2005;55; 209-11.
3. Ali M, Hotta M, Kuroiwa C, Ushijima H. Emergency obstetric care in Pakistan: potential for reduced maternal mortality through basic EmOC facilities, services and access. *International Journal of Gynecology and Obstetrics* (in press).
4. Chhetry S, Clapham S, Basnett I. Community-based maternal and child health care in Nepal: self-reported performance of maternal and child health workers. *Journal of Nepal Medical Association* 1005:44; 1-7.
5. Clift E. IEC interventions for health: a 20 year retrospective on dichotomies and directions. *Journal of Health Communication* 1998:3; 367-375.
6. Douthwaite M, Ward P. Increasing contraceptive use in rural Pakistan: an evaluation of the Lady Health Worker Programme. *Health Policy Plan.* 2005;20; 117-23.
7. Jokhio AH, Winter HR, Cheng KK. An intervention involving traditional birth attendants and perinatal and maternal mortality in Pakistan. *New England Journal of Medicine* 2005:352; 2091-9.
8. Kironde S, Klaasen S. What motivates lay volunteers in high burden but resource-limited tuberculosis control programmes? Perceptions from the Northern Cape province, South Africa. *The International Journal of Tuberculosis and Lung Disease* 2002:6; 104-110.
9. Nsutebu EF, Walley JD, Mataka E, Simon CF. Scaling-up HIV/AIDS and TB home-based care: lessons from Zambia. *Health Policy Plan.* 2001:16; 240-7.
10. Nyonator FK, Awoonor-Williams JK, Phillips JF, Jones TC, Miller RA. The Ghana

community-based health planning and services initiative for scaling up service delivery innovation. Health Policy Plan. 2005:20; 25-34.

11. Stoebenau K, Valente TW. Using network analysis to understand community-based programs: a case study from highland Madagascar. International Family Planning Perspectives 2003:29; 167-73.
12. Sultan M, Cleland JG, Ali MM. Assessment of a new approach to family planning services in rural Pakistan. American Journal of Public Health 2002:92; 1168-72.
13. Supratiko G, Wirth M, Achadi E, Cohen S, Ronsmans, C. A district-based audit of the causes and consequences of maternal deaths in South Kalimantan, Indonesia. Bull World Health Organ. 2002:80; 228-234.
14. Upvall MJ, Sochael S, Gonsalves A. Behind the mud walls: the role and practice of lady health visitors in Pakistan. Health Care for Women International 2002:23; 432-41.
15. Weisman C, Grason H, Strobina D. Quality management in public and community health: examples from Women's Health. Quality Management in Health Care 2001:10; 54-64

HEALTH POLICY

1. Introduction to Health Policy and Planning, what and why?
2. Policy Perspectives (I) Macro Policy
3. Policy Perspectives (II) Macro Policy
4. Policy Perspectives (III) Micro Level
5. Policy Perspectives: A comparison between Macro and Micro Level Policies
6. Impact of other National Policies on Health System
7. Devolution Plan: Past to Present (I)
8. Devolution Plan: Past to Present (II)
9. Health Sector Reforms: What and why?
10. Health Sector Reforms: Role of stakeholders and stakeholder analysis
11. Policy versus Planning
12. Role of International Commitments on Health Policies (MDGs,)
13. Research and Policy
14. National Policies and their implications and National Health Outcomes: Sustainability Issues
15. Health Sector Performance as a determinant of National Health Policy
16. Evidence-based Policy Making
17. Advocacy
18. Policy and Politics
19. Leadership and Policy

Recommended Readings:

1. Abel-Smith B. An introduction to health: policy, planning and financing. London: Longman Group Ltd; 1994.
2. Bennett S, McPake B, Mills A. Private health providers in developing countries: serving the public interest? London, UK: Zed Books; 1997.
3. Berman P (ed). Health sector reform in developing countries: making health development sustainable. Boston, MA: Harvard University Press; 1995.
4. Danis M, Clancy C, Churchill LR. Ethical dimensions of health policy. New York, NY: Oxford University Press; 2002.
5. de Weil C, Alicbusan AP, Wilson JF, Reich MR and Bradley DJ. The impact of development policies on health: a review of literature. Geneva: World Health Organization; 1990.
6. Grindle MS (ed). Getting good government: capacity building in the public sectors of developing countries. Boston, MA: Harvard University Press; 1997.
7. Harding A, Preker AS. Private participation in health services. Washington DC: The World Bank; 2003.

RESEARCH DESIGN 1/2/3

1. Good Public Health Professionals
2. Maintaining Good Public Health Practice
3. Teaching and Training Responsibilities
4. Relationship with Others
5. Working with Colleagues
6. Probity
7. Health and Self-care
8. Discovering the Discipline of Research
9. Definition of Research
10. Importance of Research in Public Health
11. General Tools of Research
 - a. The Library & its Resources
 - b. Computer & its Soft wares
 - c. Facility with Language

- d. Statistics as a Tool for Research
- e. Mind-maps, Conceptual Frameworks, Flow Charts
- f. Observation & Insight
- 12. Principles of Critical Reading of a Scientific Paper
- 13. Selection of Topic for Research
- 14. Parts of Proposal Writing
- 15. Stating the Problem
- 16. Reviewing the Relevant Literature
- 17. Study Design, Sampling Techniques, Inclusion & Exclusion Criteria
- 18. Methodology
- 19. Choosing the Statistical Technique
- 20. Reference Writing
- 21. Use of Endnote as Software
- 22. Abstract Writing
- 23. Title Writing for the Proposals
- 24. Basic Study Designs
- 25. Qualitative & Quantitative Approaches
- 26. Justifying Research Methodology
- 27. Establishing Research Criteria

Recommended Readings:

Same as the Epidemiology - Basic, Biostatistics - Basic, Informatics in in Public Health, and Qualitative Research Practice courses and Additionally:

1. Abramson JH, Abramson ZH. Survey methods in community medicine, 5th ed. Edinburgh: Churchill Livingstone; 1999.
2. Altman DG. Practical statistics for medical research. London: Chapman and Hall; 1991.
3. Bowling A. Research methods in health: investigating health and health services, 2nd ed. Buckingham: Open University Press; 1997.
4. Campbell DT, Stanley JC. Experimental and quasi-experimental designs for research. Boston, MA: Houghton Mifflin Company; 1966.
5. Hall GM. How to write a paper, 3rd ed. London: BMJ Publishing Group; 1996.
6. Greenhalgh T. How to read a paper: the basics of evidence-based medicine, 2nd ed. London: BMJ Publishing Group; 1997.