



**CORE COMPETENCIES REFERENCE MANUAL FOR A
PUBLIC HEALTH SCIENTIST TO PRACTISE IN ZAMBIA**

AUGUST, 2018

Contents

1.0.	INTRODUCTION	2
2.0.	EXIT EXAMINATIONS AND AWARD OF THE DIPLOMA IN PUBLIC HEALTH BY TRAINING INSTITUTIONS.....	2
3.0.	Licensure Examinations by the Health Professions Council of Zambia.....	2
4.0.	COMPETENCE OUTCOME GUIDELINES	3
5.0.	CORE COMPETENCY OUTCOME GUIDELINES	3
	CORE COMPETENCIES: PUBLIC HEALTH SCIENTIST.....	5
6.0.	BLUEPRINT WEIGHTS BY COMPETENCIES.....	16
7.0.	COMPETENCY WEIGHTING	16
8.0.	CORE PROCEDURES (LIST NOT EXHAUSTIVE).....	16
9.0.	REFERENCES (TEXT BOOKS).....	17
10.0.	REFERENCE MATERIALS AND RESOURCES	19

QUALIFICATIONS AND RESPONSIBILITIES

Title of the programme: Bachelor of Science in Public Health or its equivalent

Key accountability for the job: Public Health and Primary Health care

Primary roles and responsibilities:

1. Provision of promotive and preventive health care services
2. Carry out healthcare service leadership and management functions

1.0. INTRODUCTION

The Health Professions Council of Zambia (HPCZ) is a statutory body that was established by the Health Professions Act No. 24 of 2009. The Act renames and continues the existence of the Medical Council of Zambia established by the Medical and Allied Professions Act of 1977. The Health Professions Act No. 24 provides for the registration of health practitioners and regulation of their professional conduct; provides for the licensing of health facilities and the accreditation of health care services provided by health facilities; and provides for the recognition and approval of training programmes for health practitioners.

Following the issuance of the guidelines for introduction of licensing examinations for health professionals registered with the Health Professions Council of Zambia, this bulletin provides an outline of the core competencies for registrants who have completed the degree in Public Health seeking non-specialist registration as Public Health Scientists in Zambia.

2.0. EXIT EXAMINATIONS AND AWARD OF THE DIPLOMA IN PUBLIC HEALTH BY TRAINING INSTITUTIONS

Training institutions, private or public, approved by the Health Professions Council of Zambia are mandated to examine and graduate their students under their own seal and authority as prescribed by the HPCZ act number 24 of 2009. The Bachelor of Science degree in Public Health is also designated as a pre-service degree qualification for specialist Masters Degree in Public Health (MPH). Accordingly, a holder of this qualification will be required to take and pass the HPCZ licensing examination to qualify for registration with the Council as a public health practitioner.

3.0. Licensure Examinations by the Health Professions Council of Zambia

A person shall not practise as a health practitioner, unless that person is registered as a health practitioner in accordance with the Health Professions Act No. 24 of 2009. In the exercise of its functions under this Act, the 2nd Council and the 3rd Council of the Health Professions Council of Zambia instituted Licensure Examinations to help maintain standards given the emergence of multiple private and public training institutions. This “Bulletin of Minimum Competency Requirement for the Licensing Examination for Public Health Scientist” binds all parties

regulated under this Act. The examination fees as part of the eligibility to sit licensure examinations, are payable to the Health Professions Council of Zambia.

The HPCZ Licensing Examination assesses a Public Health Scientist's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills, that are important in health and disease and that constitute the basis of safe and effective public health practice. The HPCZ Licensing Examination includes, but is not limited to, theoretical and clinical examinations which complement each and the other components. No component is a stand-alone in the assessment of readiness for public health practice in Zambia. The candidate will be assessed under three domains, namely:-

- Knowledge
- Skills
- Attitude.

The above domains will be assessed by means of a theory examination comprising multiple choice questions followed by a practical examination.

The eight main **subject areas** (assessed under all three learning domains) for Public Health Scientist in Zambia are:

1. Introduction to public health concepts
2. Disease Prevention and Control
3. Epidemiology and Biostatistics
4. Health Systems Research
5. Health Promotion and Education
6. Healthcare Management and Leadership
7. Environmental and Community Health
8. Health Ethics, Communication Skills and Professionalism

Other subject areas prescribed by the curriculum such as Introduction to Public Health, Health Systems, and Healthcare Management and Leadership will only be assessed under the cognitive domain in the theory paper. The overall expected outcomes of the Public Health licensure examination are to ensure that the candidate will meet the minimum standards for the role as a Public Health Scientist.

4.0. COMPETENCE OUTCOME GUIDELINES

The curriculum must identify attributes in each educational domain (knowledge, skills and attitude) and present them to guide student learning and assessment by examiners. HPCZ directs public health practitioners to be compassionate and empathetic in caring for clients and the community to be trustworthy and truthful in all their professional dealings. Public health practitioners have a responsibility to respect and provide services that are up to standard for the health of the individuals and community.

5.0. CORE COMPETENCY OUTCOME GUIDELINES

The core competence reference manual must identify attributes in each educational domain (knowledge, skills and attitude) and present them to guide the LEX candidate preparations and assessment by examiners. HPCZ directs all health practitioners to be compassionate and

empathetic in caring for patients and to be trustworthy and truthful in all their professional dealings. Public health scientists have a responsibility to respect and provide care that is up to standard for the lives and health of the individuals and population that are entrusted into their hands. The expectations are largely in eight overall outcome areas which are further specified into three major competence domains.

CORE COMPETENCIES

The Public Health Scientist LEX candidate should be able to integrate epidemiological, biostatistical, management, ethical and communication scientific concepts and principles into performance and demonstration of skills related to Public Health practice. The candidate should be able to perform and demonstrate skills in relation to following competencies:

1. Disease Prevention and Control
2. Epidemiology and Biostatistics
3. Health Systems Research
4. Health Promotion and Education
5. Environmental and Community Health
6. Healthcare Management and Leadership
7. Health Ethics, Communication Skills and Professionalism

CORE COMPETENCIES: PUBLIC HEALTH SCIENTIST

DOMAIN	COMPETENCY	COMPETENCY STATEMENT	SUB COMPETENCIES
KNOWLEDGE	PUBLIC HEALTH, EPIDEMIOLOGY AND BIOSTATICS KNOWLEDGE	The candidate should demonstrate knowledge of the Public Health science, principles and practice relating to Disease Control, Epidemiology and Biostatistics, Health Systems Research, Health Promotion and Education, Environmental and Community Health, Management and Leadership, Health Ethics, Communication Skills and Professionalism	
	Disease Control		<ol style="list-style-type: none"> 1. Demonstrates understanding of the determinants of health 2. Demonstrates understanding of Public Health science and practice in relation to core Public Health Functions 3. Demonstrate knowledge of Public Health Surveillance 4. Demonstrates understanding of outbreak investigation 5. Demonstrates understanding of surveillance 6. Demonstrates understanding of the Preventive and Control strategies for Communicable and non-Communicable diseases

	<p>Epidemiology and Biostatistics</p>		<ol style="list-style-type: none"> 1. Demonstrates understanding of the basic epidemiological concepts including disease occurrence and distribution 2. Demonstrates understanding of epidemiological study designs 3. Demonstrates basic knowledge of Epidemiological measures 4. Demonstrates knowledge of descriptive and inferential statistics with regard to types of variables, measures of central tendency, measures of dispersion, hypothesis testing and tests of significance 5. Demonstrate understanding of epidemiological and surveillance evidence data in informing policy formulation, health planning and resource allocation 6. Demonstrates understanding of the application of Biostatistics to Public Health 7. Demonstrates knowledge of statistical data analysis and results presentation using excel and SPSS/STATA 8. Demonstrates understanding of application of epidemiological evidence to Public Health practice

	HEALTH PROMOTION AND Education		<ol style="list-style-type: none"> 1. Demonstrates understanding of community diagnosis 2. Demonstrates understanding of Health Promotion principles and practice 3. Demonstrates knowledge of basic health behavior change to promote individual and population health
	HEALTH SYSTEMS RESEARCH		<ol style="list-style-type: none"> 1. Demonstrates knowledge of literature review and referencing systems 2. Demonstrates understanding of research proposal design for quantitative, qualitative and mixed methods 3. Demonstrates knowledge of Health Systems Research implementation 4. Demonstrates knowledge of drawing appropriate inferences from epidemiologic data including the strengths and weaknesses of the data. 5. Demonstrates knowledge of writing and presentation skills in communicating epidemiological and Public Health information
	HEALTHCARE MANAGEMENT		<ol style="list-style-type: none"> 1. Demonstrates understanding of health care systems in relation to organizational structures,

	AND LEADERSHIP		<p>functions at facility, district, provincial and national level</p> <ol style="list-style-type: none"> 2. Demonstrates understanding of health management information system and its application to management of health service delivery. 3. Demonstrates understanding of management functions in relation to health Planning, budgeting and resource allocation, human resource management and personnel motivation and conflict resolution 4. Demonstrates understanding of health project management in relation to problem identification, intervention design, implementation, monitoring and evaluation 5. Demonstrates understanding of the policy formulation process 6. Demonstrates understanding of fundamentals of project planning, management, monitoring and evaluation
	ENVIRONMENTAL HEALTH		<ol style="list-style-type: none"> 1. Demonstrates knowledge of occupational safety and health in relation to workplace environment 2. Explains control and preventive

			<p>strategies for environmental health hazards that pose risk to human health</p> <ol style="list-style-type: none"> 3. Demonstrates understanding of global and international health in relation to climatic changes on public health
	HEALTH ETHICS, COMMUNICATION AND PROFESSIONALISM		<ol style="list-style-type: none"> 1. Demonstrates professional ethics and practice in relation to health equity and accountability. 2. Demonstrates knowledge of communication strategies in interactions with colleagues, superiors and clients
SKILLS	DISEASE CONTROL		<ol style="list-style-type: none"> 1. Conducts Community diagnosis 2. Conducts public health surveillance 3. Conducts disease outbreak investigations 4. Designs and implements disease control strategies
	EPIDEMIOLOGY, BIOSTATISTICS	The Public Health Scientist candidate should be able to integrate Epidemiological and Biostatistical scientific principles into performance and demonstration of skills related to public health practice:	<ol style="list-style-type: none"> 5. Performs epidemiological and biostatistical analysis of public health problems 6. Performs epidemiological analysis relating to disease measures, occurrence and distribution 7. investigation 8. Uses epidemiological evidence and surveillance data for identifying, analyzing, prioritising and solving Public Health related problems

			<ul style="list-style-type: none"> 9. Applies epidemiological evidence in informing policy formulation, health planning and budgeting and resource allocation 10. Conducts statistical analysis using statistical softwares such as SPSS, EPI info, STATA, presents and interprets research results 11. Collects, analyses, and interprets surveillance data 12. Draws appropriate inferences from epidemiological and public health surveillance data and research findings 13. Disseminates findings to various stakeholders 14. Communicates epidemiological and research findings through writing and presentation
	HEALTH PROMOTION AND EDUCATION		<ul style="list-style-type: none"> 1. Analyses determinants of health to explain health disparities in the community 2. Designs health promotion programmes 3. Conducts health promotion and education activities such as EPI, growth monitoring, etc.

	<p>ENVIRONMENTAL AND COMMUNITY HEALTH</p>		<ol style="list-style-type: none"> 1. Designs and provides occupational safety and health in relation to workplace environment 2. Conducts preventive and control strategies and activities for environmental health hazards that pose risk to human health
	<p>HEALTH SYSTEMS RESEARCH</p>		<ol style="list-style-type: none"> 1. Designs health systems research proposal using standard guidelines 2. Designs data collection tools 3. Conducts Health Systems Research 4. Conducts critical public health and epidemiological literature review and appraisal 5. Applies use referencing systems correctly

	<p>MANAGEMENT AND LEADERSHIP FUNCTIONS</p>		<ol style="list-style-type: none"> 1. Manages Health Management Information System 2. Outlines healthcare systems in relation to organizational structures, functions at facility, district, provincial and national level 3. Applies Health Management Information System to Health Systems appraisal 4. Carries out basic Healthcare management and Leadership functions 5. Participates in Human resource management in relation to leadership, personnel motivation and conflict resolution 6. Designs and conducts Project Management in relation to identifying public health problems, designing and implementing interventions 7. Conducts health project monitoring and evaluation 8. Conducts quality improvement processes and activities 9. Outlines health policy formulation process
--	---	--	---

	HEALTH ETHICS, COMMUNICATION SKILLS AND PREOFESSINALISM	The candidate should be able to demonstrate professional communication skills towards client and the community	<ol style="list-style-type: none"> 1. Communicate effectively with colleagues, superiors, clients and the community 2. Outline and practice principles and values of healthcare ethics 3. Applies communication strategies in interactions with individuals and groups 4. Outlines principles of professional ethics a practice in relation to health equity and accountability
ATTITUDE AND VALUES	Professionalism	The candidate should be able to integrate basic public health and scientific principles into performance and demonstration of professional attitudes in relation to the practice of public health. The candidate should be able to perform and demonstrate professional attitudes in relation to the professional dictates as follows:	<ol style="list-style-type: none"> 1. Applies epidemiological and biostatistical knowledge and skills to public health practice 2. Demonstrates knowledge of determinants of health to explain health disparities in health service delivery 3. Demonstrates understanding of health care systems in relation to organizational structures, functions at facility, district, provincial and national level 4. Demonstrates knowledge of health management information system and its application to management of health service delivery. 5. Demonstrates knowledge of human resource management in relation to leadership, personnel motivation and conflict resolution 6. Demonstrates knowledge of health

			<p>project management in relation to identify public health problems, design and implement interventions</p> <ol style="list-style-type: none"> 7. Conducts health project monitoring and evaluation 8. Demonstrates knowledge of strategies for continuous quality improvement process 9. Demonstrates knowledge in professional ethics and practice in relation to health equity and accountability. 10. Demonstrates knowledge in occupational safety and health in relation to workplace environment 11. Demonstrates knowledge of control and preventive strategies for environmental health hazards that pose risk to human health 12. Relates population growth to public health. 13. Relates climate change to public, global and international health 14. Demonstrates knowledge of referencing systems in public health 15. Performs data presentation, analysis and interpretation of results for use by professional and lay audiences 16. Designs a research proposal using standard guidelines in solving identifying, analyzing and solving health related problems 17. Designs data collection tools
--	--	--	---

			<ul style="list-style-type: none"> 18. Applies epidemiological data and evidence in informing policy formulation, health planning and resource allocation 19. Conducts community diagnosis 20. Demonstrates knowledge of the policy formulation process 21. Conducts health promotion related activities 22. Utilizes health management information system to analyzing healthcare performance and planning 23. Performs statistical data analysis and presentation of results using Excel and SPSS 24. Draws appropriate inferences from epidemiologic data including the strengths and weaknesses of the data. 25. Communicates epidemiologic information through writing and presentation. 26. Applies communication strategies in interactions with individuals and groups
	Systems-Based Practice	Graduates must demonstrate ability to work in larger context multi-disciplinary teams & system of public health	<ul style="list-style-type: none"> 1. Demonstrates knowledge of leadership approaches 2. Performs basic management functions in public health institutions and multi-disciplinary teams

6.0. BLUEPRINT WEIGHTS BY COMPETENCIES

COMPETENCY	WEIGHTS
1. Public health knowledge	60%
2. Public Health Practice	40%

7.0. COMPETENCY WEIGHTING

Competency Area	Assessment Weighting Allocation	Comment
Competency 1: Scientific Knowledge	50%	Examiners to develop Examination Blueprint for the LEX
Competency 2: Skills and Core Competencies	50%	
Competency 3: Attitudes and Values		

8.0. CORE PROCEDURES

The following procedures are the minimum standards and a full list could be found in the curriculum

Common Procedures in Public Health	Perform Community diagnosis
	Conduct Public Health Surveillance: Analyse, present and interpret
	Apply the steps in disease outbreak investigation and use multi-disciplinary team approaches to management
	Perform epidemiological analysis
	Conduct literature review and appraisal
	Formulate and conduct a basic health research
	Apply an appropriate referencing style
	Apply various statistical software packages in the analysis, presentation

	and interpretation of epidemiological and research data
	Conduct Health Promotion and education activities
	Conduct Community mobilization, participation & stakeholder meetings
	Performs management functions
	Manages HMIS

9.0. REFERENCES (TEXT BOOKS)

Competency	Competency Description & Subject Areas	Reference Materials and Resources
Competency 1: Scientific Knowledge	The LEX candidate should demonstrate basic knowledge in Public Health in relation to Social Determinants of Health, Nutrition, Epidemiology, Biostatistics, Applied Health Research Methods, Health Promotion, Health Planning, Health Policy and Management, Disease control strategies and Population Health	<ul style="list-style-type: none"> • Teutsch SM, Churchill RE, (2000). <u>Principles and Practice of Public Health Surveillance</u>, 2nd ed. NewYork, NY: Oxford University Press, • Sim J and Wright C. (2000). <u>Research In Health Care, Concepts, Designs and Methods</u> Stanley Thornes [Publishers] Ltd • 1. Ewles and Simnett (1996). <u>Promoting Health</u>, London, Baillier Tindall • GRZ (2000). <u>National Gender Policy</u>, Lusaka, Government Printers. • Hubley J (1993). <u>Communicating Health</u>, London, MacMilla • Naidoo J and Wills J (1994). <u>Health Promotion</u>, London, Baillier Tindall • Ministry of Finance and National Planning (2002). <u>Transitional</u>

<p>Competency 2: Skills and core competencies</p>	<ul style="list-style-type: none"> The candidate should be able to integrate and perform basic public health and scientific principles and practice 	<p><u>National Development Plan, 2002-2005.. Lusaka.</u></p> <ul style="list-style-type: none"> : Bossert, T, Chitah, MB, Simonet, M, Mwansa, L, Daura, M, Mabandhala, M, Bowser, D, Sevilla, J, Beauvais, J, Silondwa, G, and Simatele, M. (2000). <u>Decentralization of the Health System in Zambia. Major Applied Research 6, Technical Paper No. 2., Partnerships for Health Reform Project, Abt Associates Inc.: Bethesda, MD.</u> <u>Cook. G and Zumla. A (ed) (2003). Manson’s Tropical Diseases. London. Book Power.</u> Lucas. O.A and Gilles H.G (2003). <u>Short Textbook of Public Health; Medicine for the Tropics.</u> London. Book power
<p>Competency 3: Attitude and values</p>	<ul style="list-style-type: none"> The candidate’s demonstration of professional attitudes in relation to the science and practice of public health 	<ul style="list-style-type: none"> Adetokumbo O.L (2004). <u>Short text Book of Public Health Medicine for the tropics (4thEdition).</u> New York: Oxford University Press Inc. World Health Organisation, (1992). <u>ICD 10 classification of Mental and Behavioural disorders” Oxford, Oxford University Press.</u> Wood C.H, Vaughan J.P (1997). <u>Community Health (2nd Edition).</u> Nairobi: AMREF. Giesecke.J (2002). <u>Modern Infectious Disease Epidemiology.</u> London. Arnold Howard, A.G (2002). <u>Water Supply Surveillance: a reference manual. Leicestershire, WEDC, Southborough University</u> <u>Institute of Water and Sanitation Development (2001). Waste water and Excreta Disposal Systems: Course material. Harare, IWSD publications.</u> Timothy O’Riordan (ed) (2000), <u>Environmental Science for Environmental Management; 2nd edition, Pearson Education Ltd, England.</u> Keeling Ralph, (2000). <u>Project Management: An international perspective; Newyork, Palgrave.</u> Young L.Trevor (2006). <u>Successful project Management; London Koganpage,</u> <u>Wayne W. Daniel (2010). Biostatistics, Basic concepts</u>

		<p>and methodology for the Health sciences, 9th edition.. ISBN: 978-0-470-41333-3.</p> <ul style="list-style-type: none"> • Kenneth J. Rothman (2012). <u>Epidemiology an introduction.</u> 2nd edition. ISBN: 978-0-19-975455-7.
--	--	--

10.0. REFERENCE MATERIALS AND RESOURCES

Competency	Competency Description and Subject Areas	Reference Materials and Resources
Competency 1: Scientific Knowledge	<ul style="list-style-type: none"> • The LEX candidate should be able to demonstrate basic knowledge in Public Health sciences, Nutrition, Epidemiology, Biostatistics, Applied Research Methods, Health Promotion, Health Policies and Management, Diseases of Public Health Importance, Diversity and Cultural Proficiency, Environmental Health Sciences, Communication skills, Financial Planning and Management, Leadership and Health Systems Thinking 	<ul style="list-style-type: none"> • Teutsch SM, Churchill RE, eds. (2000). <u>Principles and Practice of Public Health Surveillance,</u> 2nd ed. NewYork, NY: Oxford University Press, • Sim J and Wright C. (2000). <u>Research In Health Care, Concepts, Designs and Methods</u> Stanley Thornes [Publishers] Ltd • Ewles and Simnett (1996). <u>Promoting Health,</u> London, Baillierr Tindall • GRZ (2000). <u>National Gender Policy,</u> Lusaka, Government Printers. • Hubley J (1993). <u>Communicating Health,</u> London, MacMilla • Naidoo J and Wills J (1994). <u>Health Promotion,</u> London, Baillierr Tindall
Competency 2: Skills and Core Competecies	<ul style="list-style-type: none"> • The candidate should be able to perform and demonstrate skills in relation to public Health science 	<ul style="list-style-type: none"> • Ministry of Finance and National Planning (). <u>Transitional National Development Plan, 2002-2005.</u> Lusaka. • Daura, M, Mtonga, S. <u>Cost Sharing Brief,</u> (2002). Central Board of Health: Lusaka. • Bossert, T, Chitah, MB, Simonet, M, Mwansa, L, Daura, M, Mabandhala, M, Bowser, D, Sevilla, J, Beauvais, J, Silondwa, G, and Simatele, M. (2000). <u>Decentralizationof the Health System in Zambia. Major Applied Research 6, Technical Paper No. 2., , Partnerships for Health Reform Project,</u>Abt Associates Inc.: Bethesda, MD.
Competency 3: Attitudes and	<ul style="list-style-type: none"> • The candidate should be able to perform and demonstrate professional attitudes in 	<ul style="list-style-type: none"> • MoH (). Cook. G and Zumla. A (ed) (2003). <u>Manson’s Tropical Diseases.</u> London. Book Power.

Values	relation to practice of public health practice	<ul style="list-style-type: none"> • MoH (). <u>ARV Management Reference Manual</u> • Lucas. O.A and Gilles H.G (2003). <u>Short Textbook of Public Health; Medicine for the Tropics.</u> London. Book power • Adetokumbo O.L (2004). <u>Short text Book of Public Health Medicine for the tropics. 4thEdition.</u> New York: Oxford University Press Inc. • World Health Organisation, (1992). <u>CD 10 classification of Mental and Behavioural disorders.</u> Oxford, Oxford University Press. • Wood C.H, Vaughan J.P (1997). <u>Community Health (2nd Edition).</u> Nairobi: AMREF. • Giesecke.J (2002). <u>Modern Infectious Disease Epidemiology.</u> London. Arnold • Howard, A.G (2002) <u>Water Supply Surveillance: a reference manual.</u> Leicestershire, WEDC, Southborough University • <u>Institute of Water and Sanitation Development.</u> (2001). <u>Waste water and Excreta Disposal Systems: Course material.</u> Harare, IWSD publications. • MoH (). <u>PMTCT Management Reference Manual</u> • MoH (). <u>IMCI Management Reference Manual</u> • Evens I., Huezco C (1997). <u>Family Planning Hand book for health professionals: Sexual and reproductive health approach,</u> IPPF. • Timothy O’Riordan(ed) (2000). <u>Environmental Science for Environmental Management;</u> 2nd edition, Pearson Education Ltd, England. • Keeling Ralph, (2000). <u>Project Management: An international perspective;</u> Newyork, palgrave,. • Young L.Trevor (2006). <u>Successful project Management;</u> London Koganpage, • Rebecca G. Knapp and Mller III C. M. (1992). <u>Clinical Epidemiology and Biostatistics.</u> Williams & Williams.
--------	--	--

		<p>London</p> <ul style="list-style-type: none">• <u>Wayne W. Daniel (2010). Biostatistics, Basic concepts and methodology for the Health sciences. 9Th edition. ISBN: 978-0-470-41333-3.</u>• <u>Kenneth J. Rothman (2012). Epidemiology an introduction. 2nd edition. ISBN: 978-0-19-975455-7.</u>
--	--	---