



**CORE COMPETENCIES REFERENCE  
MANUAL FOR ENVIRONMENTAL  
HEALTH OFFICERS  
TO PRACTICE IN ZAMBIA**

**CORE COMPETENCIES & MINIMUM STANDARDS**

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## QUALIFICATION AND RESPONSIBILITIES

**Title of the programme:** Bachelor of Science in Environmental Health (BSc.EH) or equivalent.

**Key accountability for the job:** To monitor, maintain and protect environmental and public health standards.

**Primary roles and responsibilities:**

1. Inspecting of business premises for health and safety, food hygiene and food standards.
2. Following up complaints investigating outbreaks of food poisoning, infectious diseases and environmental incidents that affects health.
3. Collecting samples from the environment to ensure adherence to standards.
4. Investigation of complaints about different environmental infractions.
5. Informing, educating and empowering people about environmental health issues.
6. Enforcing laws and regulations that protect environmental health and ensure safety.

## 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 to be registered with the Health Professions Council of Zambia, this bulletin provides an outline of the core curriculum and minimum standards for registrants who have completed the Bachelor of Science in Environmental Health (BSc.EH) or its equivalent seeking registration as Environmental Health Officers in Zambia.

## 2.0 EXIT EXAMINATIONS AND AWARD OF THE BACHELORS DEGREE IN ENVIRONMENTAL HEALTH BY TRAINING INSTITUTIONS

Training institutions, private or public (local and foreign), approved/recognised by the Health Professions Council of Zambia are mandated to examine and graduate their students under their own seal and authority. The Bachelor's Degree in Environmental Health award is designated as the primary qualification of the practitioner and it is a pre-requisite requirement for eligibility for non-specialist Environmental Health Officer licensure examinations. Accordingly, a holder of the Bachelor's Degree in Environmental Health or its equivalent will be required to take and pass the HPCZ licensure examination to qualify for registration with the Council as an Environmental Health Officer (EHO).

## 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 2<sup>nd</sup> Council and the 3<sup>rd</sup> Council of the Health Professions Council of Zambia instituted Licensure Examinations to help maintain standards given the emergence of multiple private and public training institution. This bulletin of information on the "Core competences and Minimum Standards for the Licensing Examinations for Environmental Health Officers to Work in Zambia" binds all parties regulated under this Act. Examination fees for

licensure examinations, as prescribed by the Council, are payable to the Health Professions Council of Zambia as part of the eligibility to sit licensure examinations.

The HPCZ Licensure Examination assesses an Environmental Health Officer's ability to apply knowledge, concepts, and principles and to demonstrate fundamental Environmental Health Officer centered skills, that are important in health and disease prevention and that constitute the basis of safe and effective environmental health care. The HPCZ Licensure Examination includes, but is not limited to, theoretical and practical examinations which complement each other. No component is a stand-alone in the assessment of readiness for environmental health officer practice in Zambia.

The candidate will be assessed under three domains, namely:-

1. Knowledge
2. Skills
3. Attitude

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

The six (6) main subject areas (assessed under all three (3) learning domains) for Environmental Health Officers in Zambia are:

1. Environmental pollution control
2. Occupational health and safety
3. Food safety and hygiene
4. Community health
5. Built environment
6. Overarching skills

The overall expected outcomes for the environmental health officer licensure examination is to ensure that the candidates will meet the minimum standards for the role as an Environmental Health Officer in charge of monitoring, maintaining and protecting the environmental and public health standards.

## 4.0 COMPETENCE OUTCOME GUIDELINES

The curriculum must have identified attributes in each educational domain (knowledge, skills and attitude) and present them to guide student learning and assessment by examiners. HPCZ directs EHOs to be equipped with adequate knowledge and skills and apply the principles of environmental health in the execution of professional duties. Environmental Health Officers must be fully equipped in both social and scientific approaches to promote the health of humankind through evidence-based practice and interventions as determined by physical, biological, social and psychosocial factors in the environment. At the end of the programme the candidate should be able to demonstrate and exhibit adequate knowledge, skills and attitudes towards environmental health practice. The expectations are largely in four competence areas.

### OVERALL COMPETENCE OUTCOMES

#### **1. Environmental Health and safety**

- a) Identify current and potential health hazards and risks in workplace and community
- b) Compile a comprehensive risk management plan
- c) Apply various strategies to address current and potential risks
- d) Monitor and review the effectiveness of comprehensive risk management strategies
- e) Communicate outcomes of risk management to the relevant stakeholders

#### **2. Environmental Health Promotion**

- a) Conduct a situation analysis in a community
- b) Develop, implement and evaluate health promotion programmes

#### **3. Environmental Health Services**

- a) Apply relevant policies and legislation for the provision of environmental health services
- b) Develop policies and legislation for environmental health services
- c) Apply set criteria for development control
- d) Apply skills and techniques to manage human resource in an environmental health context
- e) Manage financial matters and physical resources of an environmental health service
- f) Demonstrate computer literacy skills

#### **4. Environmental Health Research**

- a) Identify research needs
- b) Apply research principles in design and conduct of investigation
- c) Manage research data

- d) Develop intervention measures
- e) Implement and evaluate intervention measures
- f) Communicate research results in appropriate format

## **5. Interpersonal Relations and Professional Behaviour(Ethical Code)**

- a) Develop and manage communication strategies to improve environmental health services
- b) Communicate verbally, in writing and electronically according to requirements to all stakeholders
- c) Facilitate resolution of conflicts within the work environment
- d) Manage communication and marketing strategies that are related to environmental health
- e) Interpret and apply code of ethics in implementing the code of practice for environmental health practitioners

5.0 CORE COMPETENCIES: ENVIRONMENTAL HEALTH OFFICER

**Table 1: Core Competencies of Environmental Health Officers**

DOMAIN	COMPETENCY STATEMENT	COMPETENCY	SUBCOMPETENCIES
KNOWLEDGE	The graduate Environmental Health Officer (EHO) should be able to demonstrate knowledge in the science and art of preventing disease, prolonging life and promoting physical, social and mental well-being.	Environmental Health Knowledge	<ol style="list-style-type: none"> <li>1. Understands the basic principles relevant to the management of built environment, community health, environmental pollution control, food safety and hygiene, occupational health and safety.</li> <li>2. Understands the basic principles of Environmental Health law, the legal system, the structure of government and government systems.</li> <li>3. Demonstrates knowledge in developing strategies for mitigating environmental needs.</li> <li>4. Demonstrates knowledge in disease control and outbreak investigations</li> </ol>
SKILLS	The EHO graduate should be able to assess, correct, control and prevent those factors in the environment that can potentially or adversely affect people’s health.	Practical based learning and application	<ol style="list-style-type: none"> <li>1. Demonstrates skills in planning for environmental health services ranging from built environment, community health, environmental pollution control, food safety and hygiene, occupational health and safety and overarching issues.</li> <li>2. Determines the nature of a hazard and quantify the level of risk associated with that hazard.</li> </ol>



DOMAIN	COMPETENCY STATEMENT	COMPETENCY	SUBCOMPETENCIES
			<ol style="list-style-type: none"> <li>3. Determines appropriate courses of action to promote public health</li> <li>4. Determines appropriate courses of action to remedy environmental health problems</li> <li>5. Interprets qualitative and quantitative data and develop appropriate action.</li> <li>6. Designs a research proposal, conducts research, interprets research results, implement research results and evaluate the impact of interventions.</li> <li>7. Plans, executes and reports on assessments, investigations and audits.</li> <li>8. Demonstrates effective interpersonal and communication skills</li> <li>9. Applies the relevant environmental and public health laws and other legal procedures to protect public health</li> </ol>

DOMAIN	COMPETENCY STATEMENT	COMPETENCY	SUBCOMPETENCIES
ATTITUDES	The EHO graduate must be able to demonstrate a commitment to carryout professional, responsibilities, adherence to ethical principles in order to deliver quality and effective environmental health services as close to the family as possible.	Professionalism	<ol style="list-style-type: none"> <li>1. Demonstrates ethically sound practice</li> <li>2. Practices informed good decision making</li> <li>3. Respects and collaborates with the community in handling public health matters</li> <li>4. Demonstrates adherence to code of practice</li> <li>5. Upholds professional behavioral ethics and standards of practice</li> <li>6. Demonstrates accountability to the general public and the profession</li> <li>7. Responds with sensitivity to diverse community perceptions regardless of gender, age, culture, race, religion or disabilities</li> </ol>
	The EHO graduate must demonstrate a work integrated learning / professional placement in order to provide public health care that is of optimal value at workplaces and the community	Teamwork and collaboration	<ol style="list-style-type: none"> <li>1. Engages and communicates with partner organizations, community, fellow professionals and other stakeholders</li> <li>2. Works in a multidisciplinary team of health care workers and other professionals</li> </ol>



## 6.0 BLUEPRINT WEIGHTING

**Table 2: Blueprint Weighting For Environmental Health Officers Licensure Examination**

AREA	WEIGHTING
ENVIRONMENTAL HEALTH KNOWLEDGE	60%
1. Built environmental	10
2. Community health	25
3. Environmental pollution control	20
4. Food safety and hygiene	20
5. Occupational health and safety	20
6. Overarching skills	5
<b>Total</b>	<b>100%</b>
PRACTICAL	40%
7. Community health	20
8. Environmental pollution control	30
9. Food safety and hygiene	30
10. Occupational health and safety	20
<b>Total</b>	<b>100%</b>

## 7.0 CORE PROCEDURES

The following are the minimum procedures for the Environmental Health Officers the full list could be found in the curriculum.

**Table 3: Minimum Competencies for Environmental Health Officers**

SUBJECT AREA	PROCEDURE
Environmental Pollution Control	Environmental risk assessment <ol style="list-style-type: none"> <li>1. Conduct air sampling and testing</li> <li>2. Conduct water sampling and testing</li> <li>3. Conduct soil sampling and testing</li> <li>4. Conduct noise monitoring</li> <li>5. Interpret environmental monitoring results</li> </ol>
Occupational Health and Safety	Workplace risk assessment <ol style="list-style-type: none"> <li>1. Conduct occupational air sampling and testing</li> <li>2. Conduct occupational noise measurement</li> <li>3. Conduct occupational heat measurement</li> </ol>

SUBJECT AREA	PROCEDURE
	<ol style="list-style-type: none"> <li>4. Inspect workplaces for health and safety</li> <li>5. Interpret results for occupational exposure measurements</li> </ol>
Food safety and hygiene	<ol style="list-style-type: none"> <li>1. Conduct food sampling</li> <li>2. Conduct meat inspection</li> <li>3. Inspect food premises</li> <li>4. Advise on disposal of condemned foods</li> <li>5. Interpret food laboratory results</li> <li>6. Conduct accident investigation in workplaces</li> </ol>
Community Health	<ol style="list-style-type: none"> <li>1. Conduct water quality monitoring and testing</li> <li>2. Inspect premises</li> <li>3. Conduct community diagnosis</li> <li>4. Identify and implement health promotion activities</li> <li>5. Interpret water quality laboratory results</li> <li>6. Investigate disease outbreaks and identify appropriate control measures</li> </ol>
Built environment	<ol style="list-style-type: none"> <li>1. Scrutinize building plans</li> <li>2. Inspect buildings at different stages</li> </ol>
Research	<ol style="list-style-type: none"> <li>3. Develop research proposal and Conduct research</li> </ol>

8.0 REFERENCES MATERIALS

**Table 4: Reading Materials**

Subject Area	READING LIST NOT EXHAUSTIVE
Built Environment	Allen, E. and Iano, J., (2013). <i>Fundamentals of building construction: materials and methods</i> . John Wiley & Sons.
	Blankenbaker, E.K., (2013). <i>Construction and building technology</i> . The Good heart willcox Company, Illinois.
Community Health	Hawker, J., Begg, N., Blair, I., Reintjes, R. and Weinberg, J., (2008). <i>Communicable disease control handbook</i> . John Wiley & Sons.
	Naidoo, J. and Wills, J., (2000). <i>Health promotion: foundations for practice</i> . Elsevier Health Sciences.

Subject Area	READING LIST NOT EXHAUSTIVE
	<p>Park, K., (2015). <i>Prevention and Social Medicine</i>. M/s Banarsidas Bhanot Publishers, Jabalpur, India: ISN: 978-93-82219-05-7</p> <p>World Health Organization (2011). <i>Guidelines for drinking-water quality</i>. Geneva: WHO Press.</p> <p>World Health Organization, (2006). Pesticides and their application: for the control of vectors and pests of public health importance.</p>
Environmental Pollution Control	<p>Farmer, A., (2002). <i>Managing environmental pollution</i>. Routledge. New York</p> <p>Rangwala, S.C., Rangwala, K.S. and Rangwala, P.S., (2007). <i>Water supply and sanitary engineering</i>. Charotar. ISBN: 81-85594-79-1.</p> <p>World Health Organization, (2005). <i>Management of solid health-care waste at primary health care centers: decision making guide</i>. Geneva: World Health Organization Press.</p>
Food safety and hygiene	<p>Collins, D. S. and Huey, R.J. (2015). <i>Gracey's Meat hygiene</i>. 11<sup>th</sup> Edition. John Wiley and Sons. London. ISBN 978-1-118-65001-1</p> <p>FAO, (2008). <i>Risk-Based Food Inspection Manual</i>. Rome: FAO Publications</p> <p>FAO/WHO, (2001). <i>Food Standards Programme. Codex Alimentarius – Food hygiene – Basic texts</i>. 2nd Edition. Rome: FAO/WHO Publication</p> <p>Wilson, W.G., (2008). <i>Wilson's practical meat inspection</i>. John Wiley &amp; Sons. ISBN:9781405124935; ISBN:9780470753200</p>
Occupational Health and Safety	<p>Afubwa, S. O. and Mwanthi, M. A. (2014). <i>Environmental Health and Occupational Health and Safety</i>. Nairobi: A crocodile Publishing.</p> <p>Elgstrand, K. and Petersson, N.F., (2009). <i>OSH for development: occupational safety and health for development</i>. KTH Royal Institute of Technology.</p>
Laws	<p>GRZ (2001). Food and Drugs Act, CAP 303. Lusaka: Ministry of Justice</p> <p>GRZ, (2001). Public Health Act, CAP 295. Lusaka: Ministry of Justice.</p>

Subject Area	READING LIST NOT EXHAUSTIVE
	GRZ, (2010). Occupational health and safety act. Ministry of Justice.
	GRZ, (2011). Environmental Management Act Number 12. Ministry of Justice.
Research	Roger R.D. Peng and Dominici F. (2008). <i>Statistical methods for environmental epidemiology</i> . New York: Springer-Verlag
	Kirkwood, B.R. and Sterne, J.A., (2010). <i>Essential medical statistics</i> . John Wiley & Sons.
	Rothman, K.J., (2012). <i>Epidemiology: an introduction</i> . Oxford university press.
General Environmental Health Knowledge	Bassett, W.H., (2004). <i>Clay's Handbook of Environmental Health</i> . London: Spon Press.
	Bassett, W.H., (2007). <i>Environmental health procedures</i> . Routledge.
Professionalism	Banda S.B. Healthcare Ethics and Professionalism Course. <a href="https://virtualityacademy.com/">https://virtualityacademy.com/</a>
	HPCZ, (2014). <i>Professional code of ethics and discipline: Fitness to Practice</i> . HPCZ Lusaka
	HPCZ, (2016). <i>Patients' rights and responsibilities</i> . HPCZ Bulletin, Lusaka.
	HPCZ, (2016). <i>Guidelines for good practice in the Healthcare profession – Generation and management of patient records</i> . HPCZ Lusaka
	HPCZ, (2016). <i>Guidelines for good practice in the Healthcare profession – Maintaining Patient Confidentiality</i> . HPCZ Lusaka.