NATIONAL OPEN UNIVERSITY OF NIGERIA

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE

COURSE CODE: EHS 320

COURSE TITLE: ENVIRONMENTAL HEALTH ECONOMIES

COURSE GUIDE

EHS 320 ENVIRONMENTAL HEALTH ECONOMIES

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COURSE GUIDE

CONTENTS **PAGE**

Introduction

EHS 320 titled “Environmental Health Economies” is a two (2) Unit course with four (4) Modules and eleven (11) Units.

Health economies is a branch of economies concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and healthcare. In broad terms, health economists study the functioning of healthcare systems and health-affecting behaviors such as smoking.

Other areas include extensive government intervention, intractable uncertainty in several dimensions, asymmetric information, barriers to entry, externalities and the presence of a third-party agent. In healthcare, the third-party agent is the physician, who makes purchasing decisions (e.g., whether to order a lab test, prescribe a medication, perform a surgery, etc.) while being insulated from the price of the product or service.

Health economists evaluate multiple types of financial information: costs, charges and expenditures.

Uncertainty is intrinsic to health, both in patient outcomes and financial concerns. The knowledge gap that exists between a physician and a patient creates a situation of distinct advantage for the physician, which is called asymmetric information.

What you will learn in this course

In this course, you have the course units and a course guide. The course guide will tell you what the course is all about. It is general overview of the course materials you will be using and how to use those materials. It also helps you to allocate the appropriate time to each unit so that you can successfully complete the course within the stipulated time limit.

The course guide also helps you to know how to go about your Tutor-Marked Assignment which will form part of your overall assessment at the end of the course. Also, there will be regular tutorial classes that are related to this course, where you can interact with your facilitator and other students. Please, I encourage you to attend these tutorial classes.

Course Aims

The course aims to give you an understanding on the concept of Environmental Health Economics.

Course Objective

To achieve the aim set above, there are objectives. Each unit has a set of objectives presented at the beginning of the unit. These objectives will guide you on what to concentrate / focus on while studying the unit. Please read the objective before studying the unit and during your study to check your progress. The Comprehensive Objectives of the Course are given below.

By the end of the course/after going through this course, you should be able to:

- Define the term concept of Environmental Health Economies.

Working through this course

To successfully complete this course, you are required to read each study unit, read the textbooks materials provided by the National Open University.

Reading the referenced materials can also be of great assistance.

Each unit has self-assessment exercises which you are advised to do and at certain periods during the course you will be required to submit your assignment for the purpose of assessment.

There will be a final examination at the end of the course. The course should take you about 17 weeks to complete.

This course guide will provide you with all the components of the course how to go about studying and hour you should allocate your time to each unit so as to finish on time and successfully.

The Course Materials

The main components of the course are:

- The Study Guide
- Study Units
- Reference / Further Readings
- Assignments
- Presentation Schedule

STUDY UNIT

The study units in this course are given below:

EHS 320 ENVIRONMENTAL HEALTH ECONOMIES (1 UNIT)

Module 1: Definitions, theories and Concept of Environmental Health Economies

Unit 1: Definitions

Unit 2: Theories

Unit 3: Concept

Module 2: Health Care Financing and Implications to health care delivery.

Unit 1: Health Care Financing

Unit 2: Implications to health care delivery

Unit 3: National Health Scheme

MODULE 3: Cost Recovery Strategies

Unit 1 Cost recovery strategies

Unit 2 Private Sector Participation

MODULE 4: Social Economic Cost of ill health

Unit 1 Social Economic Cost of ill health

Unit 2 Factors affecting access to health Services

Unit3 Economic implications of Diseases

There are activities related to the lecture in each unit which will help your progress and comprehension of the unit. You are required to work on these exercises which together with the TMAs will enable you to achieve the objectives of each unit.

Presentation Schedule

There is a time-table prepared for the early and timely completion and submissions of your TMAs as well as attending the tutorial classes. You are required to submit all your assignments by the stipulated time and date. Avoid falling behind the schedule time.

Assessment

There are three aspects to the assessment of this course.

The first one is the self-assessment exercises. The second is the tutor marked assignments and the third is the written examination or the examination to be taken at the end of the course.

Do the exercises or activities in the unit by applying the information and knowledge you acquired during the course. The tutor-marked assignments

must be submitted to your facilitator for formal assessment in accordance with the deadlines stated in the presentation schedule and the assignment file.

The work submitted to your tutor for assessment will count for 30% of your total course work.

At the end of this course, you have to sit for a final or end of course examination of about a three hour duration which will count for 70% of your total course mark.

Tutor-Marked Assignment

This is the continuous assessment component of this course and it accounts for 30% of the total score. You will be given four (3) TMAs by your facilitator to answer. Three of which must be answered before you are allowed to sit for the end of course examination.

These answered assignments are to be returned to your facilitator.

You're expected to complete the assignments by using the information and material in your readings references and study units.

Reading and researching into you references will give you a wider via point and give you a deeper understanding of the subject.

1. Make sure that each assignment reaches your facilitator on or before the deadline given in the presentation schedule and assignment file. If for any reason you are not able to complete your assignment, make sure you contact your facilitator before the assignment is due to discuss the possibility of an extension. Request for extension will not be granted after the due date unless there in exceptional circumstances.

2. Make sure you revise the whole course content before sitting or the examination. The self-assessment activities and TMAs will be useful for this

purposes and if you have any comment please do before the examination. The end of course examination covers information from all parts of the course.

Course Marking Scheme

Assignment	Marks
Assignments 1 – 3	Three assignments, best three marks of the Three count at 10% each–30% of course marks.
End of course examination	70% of overall course marks
Total	100% of course materials.

Facilitators/Tutors and Tutorials

Sixteen (16) hours are provided for tutorials for this course. You will be notified of the dates, times and location for these tutorial classes.

As soon as you are allocated a tutorial group, the name and phone number of your facilitator will be given to you.

These are the duties of your facilitator: He or she will mark and comment on your assignment. He will monitor your progress and provide any necessary assistance you need. He or she will mark your TMAs and return to you as soon as possible.

(You are expected to mail your tutored assignment to your facilitator at least two days before the schedule date).

Do not delay to contact your facilitator by telephone or e-mail for necessary assistance if you do not understand any part of the study in the course material.

You have difficulty with the self assessment activities. You have a problem or question with an assignment or with the grading of the assignment.

It is important and necessary you acted the tutorial classes because this is the only chance to have face to face content with your facilitator and to ask questions which will be answered instantly. It is also period where you can say any problem encountered in the course of your study.

Summary

Health economists evaluate multiple types of financial information: costs, charges and expenditures. Uncertainty is intrinsic to health, both in patient outcomes and financial concerns. The knowledge gap that exists between a physician and a patient creates a situation of distinct advantage for the physician, which is called asymmetric information .

At the end of this unit, you should be able to:

- Explain the concept of Environmental Health Economics

The list of questions expected to be answered is not limited to the above list. Finally, you are expected to apply the knowledge you have acquired during this course to your practical life.

I wish you success in this course.

Course Code: EHS 320

Course Title: ENVIRONMENTAL HEALTH ECONOMICS

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CONTENT **PAGE**

EHS 320 ENVIRONMENTAL HEALTH ECONOMICS

EHS 320 ENVIRONMENTAL HEALTH ECONOMICS (2 UNIT)

MODULE 1: Definitions, Theories and Concept of Environmental Health Economics

Unit 1: Definition of Environmental Health Economics

CONTENT

1.0 INTRODUCTION

Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and healthcare. In broad terms, health economists study the functioning of healthcare systems and health-affecting behaviors such as smoking. Other areas include extensive government intervention, intractable uncertainty in several dimensions, asymmetric information, barriers to entry, externalities and the presence of a third-party agent. In healthcare, the third-party agent is the physician, who makes purchasing decisions (e.g., whether to order a lab test, prescribe a medication, perform a surgery, etc.) while being

insulated from the price of the product or service. Health economists evaluate multiple types of financial information: costs, charges and expenditures.

Uncertainty is intrinsic to health, both in patient outcomes and financial concerns. The knowledge gap that exists between a physician and a patient creates a situation of distinct advantage for the physician, which is called asymmetric information.

2.0 OBJECTIVES

At the end of this course, students should be able to:

1.0Define Environmental Health Economics

2.0Mention the eight scope of Environmental Health Economics

3.0MAIN CONTENT

3.1 Definition of Environmental Health Economics

Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and healthcare. In broad terms, health economists study the functioning of healthcare systems and health-affecting behaviors such as smoking.

Factors that distinguish health economics from other areas include extensive government intervention, intractable uncertainty in several dimensions, asymmetric information, barriers to entry, externalities and the presence of a third-party agent. In healthcare, the third-party agent is the physician, who makes purchasing decisions (e.g., whether to order a lab test, prescribe a medication, perform a surgery, etc.) while being insulated from the price of the product or service.

Health economists evaluate multiple types of financial information: costs, charges and expenditures.

Uncertainty is intrinsic to health, both in patient outcomes and financial concerns. The knowledge gap that exists between a physician and a patient creates a situation of distinct advantage for the physician, which is called asymmetric information.

Externalities arise frequently when considering health and health care, notably in the context of infectious disease. For example, making an effort to avoid catching the common cold affects people other than the decision maker

The scope of health economics is neatly encapsulated by Alan Williams' "plumbing diagram" dividing the discipline into eight distinct topics:

- What influences health? (Other than healthcare)
- What is health and what is its value?
- The demand for healthcare
- The supply of healthcare
- Micro-economic evaluation at treatment level
- Market equilibrium
- Evaluation at whole system level
- Planning, budgeting and monitoring mechanisms.

Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments. This definition excludes behavior not related to

environment, as well as behavior related to the social and cultural environment, and genetics.

Environmental Health is the field of science that studies how the environment influences human health and disease. “Environment,” in this context, means things in the natural environment like air, water and soil, and also all the physical, chemical, biological and social features of our surroundings.

The man-made, or “built,” environment includes physical structures where people live and work such as homes, offices, schools, farms and factories, as well as community systems such as roads and transportation systems, land use practices and waste management. Consequences of human alteration to the natural environment, such as air pollution, are also parts of the man-made environment.

The social environment encompasses lifestyle factors like diet and exercise, socioeconomic status, and other societal influences that may affect health.

4.0 CONCLUSION

In this unit you, learnt about the definition of Environmental Health Economic. Also the eight scope of Environmental health economic by Alan Williams.

5.0SUMMARY

You have been introduced to the field of Environmental health economics including the eight scope of environmental health economics. Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and healthcare. In broad terms, health economists study the functioning of healthcare systems and health-affecting behaviors such as smoking.

6.0TUTOR-MARKED ASSIGNMENT

1. Define Environmental Health Economics
2. Mention the eight scope of Environmental health economics by Alan Williams.

Solution

1. Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behavior in the production and consumption of health and healthcare. In broad terms, health economists study the functioning of healthcare systems and health-affecting behaviors such as smoking.Factors that distinguish health economics from other areas include extensivegovernment intervention, intractable uncertainty in several dimensions, asymmetric information, barriers to entry, externalities and the presence of a third-party agent. In healthcare, the third-party agent is the physician, who makes purchasing decisions (e.g., whether to order a lab test, prescribe a medication, perform a surgery, etc.) while being insulated from the price of the product or service.

Health economists evaluate multiple types of financial information: costs, charges and expenditures.

2. The scope of health economics is neatly encapsulated by Alan Williams' "plumbing diagram" dividing the discipline into eight distinct topics:

- What influences health? (Other than healthcare)
- What is health and what is its value?
- The demand for healthcare
- The supply of healthcare

- Micro-economic evaluation at treatment level
- Market equilibrium
- Evaluation at whole system level
- Planning, budgeting and monitoring mechanisms.

7.0 REFERENCES

- Robert N and Stavins (2008). "environmental economics,"*The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract & article.
- David Pearce (2002). "An Intellectual History Of Environmental Economics", Annual Review of Energy and the Environment 2002, 27:57–81.

UNIT 2: THEORIES OF ENVIRONMENTAL HEALTH ECONOMICS

CONTENT

1.0 Introduction

The demand for healthcare is a derived demand from the demand for health. Healthcare is demanded as a means for consumers to achieve a larger stock of "health capital." The demand for health is unlike most other goods because individuals allocate resources in order to both consume and produce health.

2.0Objectives

At the end of this unit, the students will be enlightened on the demand for healthcare.

3.0Main Content

3.1 Definition of term

The demand for healthcare is a derived demand from the demand for health. Healthcare is demanded as a means for consumers to achieve a larger stock of

"health capital." The demand for health is unlike most other goods because individuals allocate resources in order to both consume and produce health.

The above description gives three roles of persons in health economics. The World Health Report states that people take four roles in the healthcare:

1. Contributors
2. Citizens
3. Provider
4. Consumers

Michael Grossman's 1972 model of health production has been extremely influential in this field of study and has several unique elements that make it notable. Grossman's model views each individual as both a producer and a consumer of health. Health is treated as a stock which degrades over time in the absence of "investments" in health, so that health is viewed as a sort of capital. The model acknowledges that health is both a consumption good that yields direct satisfaction and utility, and an investment good, which yields satisfaction to consumers indirectly through fewer sick days. Investment in health is costly as consumers must trade off time and resources devoted to health, such as exercising at a local gym, against other goals. These factors are used to determine the optimal level of health that an individual will demand. The model makes predictions over the effects of changes in prices of healthcare and other goods, labour market outcomes such as employment and wages, and technological changes. These predictions and other predictions from models extending Grossman's 1972 paper form the basis of much of the econometric research conducted by health economists.

In Grossman's model, the optimal level of investment in health occurs where the marginal cost of health capital is equal to the marginal benefit. With the passing of time, health depreciates at some rate. The interest rate faced by the

consumer is denoted by^{r}**.** The marginal cost of health capital can be found by

adding these variables: $MC_{HK}=r+\delta$

Where MC_{HK} = ***Marginal Cost of Health Capital***

$r+\delta$ = ***Marginal Benefit***

The marginal benefit of health capital is the rate of return from this capital in both market and non-market sectors. In this model, the optimal health stock can be impacted by factors like age, wages and education. As an example, increases with age, so it becomes more and more costly to attain the same level of health capital or health stock as one ages. Age also decreases the marginal benefit of health stock. The optimal health stock will therefore decrease as one ages.

Beyond issues of the fundamental, "real" demand for medical care derived from the desire to have good health (and thus influenced by the production function for health) is the important distinction between the "marginal benefit" of medical care (which is always associated with this "real demand" curve based on derived demand), and a separate "effective demand" curve, which summarizes the amount of medical care demanded at particular market prices. Because most medical care is not purchased from providers directly, but is rather obtained at subsidized prices due to insurance, the out-of-pocket prices faced by consumers are typically much lower than the market price. The consumer sets out of pocket, and so the "effective demand" will have a separate relationship between price and quantity than will the "marginal benefit curve" or real demand relationship. This distinction is often described under the rubric of

"ex-post moral hazard" (which is again distinct from ex-ante moral hazard, which is found in any type of market with insurance).

4.0 Conclusion

Beyond issues of the fundamental, "real" demand for medical care derived from the desire to have good health (and thus influenced by the production function for health) is the important distinction between the "marginal benefit" of medical care (which is always associated with this "real demand" curve based on derived demand), and a separate "effective demand" curve, which summarizes the amount of medical care demanded at particular market prices. Because most medical care is not purchased from providers directly, but is rather obtained at subsidized prices due to insurance, the out-of-pocket prices faced by consumers are typically much lower than the market price.

5.0 Summary

The consumer sets out of pocket, and so the "effective demand" will have a separate relationship between price and quantity than will the "marginal benefit curve" or real demand relationship. This distinction is often described under the rubrics of "ex-post moral hazard" (which is again distinct from ex-ante moral hazard, which is found in any type of market with insurance).

6.0 Tutor-marked Assignment

Briefly write on the demand for health care.

Solution

The demand for healthcare is a derived demand from the demand for health. Healthcare is demanded as a means for consumers to achieve a larger stock of "health capital." The demand for health is unlike most other goods because individuals allocate resources in order to both consume and produce health.

The above description gives three roles of persons in health economics. The World Health Report states that people take four roles in the healthcare:

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Michael Grossman's 1972 model of health production has been extremely influential in this field of study and has several unique elements that make it notable. Grossman's model views each individual as both a producer and a consumer of health. Health is treated as a stock which degrades over time in the absence of "investments" in health, so that health is viewed as a sort of capital. The model acknowledges that health is both a consumption good that yields direct satisfaction and utility, and an investment good, which yields satisfaction to consumers indirectly through fewer sick days. Investment in health is costly as consumers must trade off time and resources devoted to health, such as exercising at a local gym, against other goals. These factors are used to determine the optimal level of health that an individual will demand.

7.0 References

- Maureen L. Cropper and Wallace E. Oates (1992). "Environmental Economics: A Survey,"*Journal of Economic Literature*, 30(2), pp. 675-740(press +).
- David Pearce (2002). "An Intellectual History Of Environmental Economics", Annual Review of Energy and the Environment 2002, 27:57–81.

UNIT 3: CONCEPT OF ENVIRONMENTAL HEALTH ECONOMICS

CONTENT

1.0INTRODUCTION

Health economics is an important element of health policy, both at the strategic (macroeconomics) and tactical levels (microeconomics).Macroeconomics in health deals with overall financing and allocation of health resources, while Microeconomics compares alternative approaches to dealing with specific health issues (decision calculation).Monetary resources for health are limited in all countries, and difficult choices have to be made in their allocation. Management of health care requires an understanding of use of resources, priorities, and trade-offs in health.

2.0OBJECTIVE

At the end of this unit, the student should be able to write on the importance of health economics as an element of health policy.

3.0MAIN CONTENT

3.1Definition of term

All professional health care providers and planners need a working knowledge of the fundamentals of health economics and how regulation and economic incentives and disincentives affect the supply, demand, and ultimately the cost of health services. This knowledge helps one to understand and appreciate how health care, while beneficial in terms of reduced morbidity and mortality, also has a cost in terms of resources used, and how health can be improved while facing constraints of limited resources.

Health economics is an important element of health policy, both at the strategic (macroeconomics) and tactical levels (microeconomics).Macroeconomics in health deals with overall financing and allocation of health resources, while Microeconomics compares alternative approaches to dealing with specific health issues (decision calculation).Monetary resources for health are limited in all countries, and difficult choices have to be made in their allocation. Management of health care requires an understanding of use of resources, priorities, and trade-offs in health.

4.0CONCLUSION

This knowledge helps one to understand and appreciate how health care, while beneficial in terms of reduced morbidity and mortality, also has a cost in terms of resources used, and how health can be improved while facing constraints of limited resources

5.0SUMMARY

Management of health care requires an understanding of use of resources, priorities, and trade-offs in health.

6.0 TUTOR-MARKED ASSIGNMENT

Write on micro-economics as it relates to health.

Solution

Macroeconomics in health deals with overall financing and allocation of health resources, while Microeconomics compares alternative approaches to dealing with specific health issues (decision calculation).Monetary resources for health are limited in all countries, and difficult choices have to be made in their allocation. Management of health care requires an understanding of use of resources, priorities, and trade-offs in health.

7.0 REFERENCES

- Allen, K. Kneese and Clifford, S. Russell (1987). "environmental economics," *The New Palgrave: A Dictionary of Economics*, v. 2, pp. 159–64.
- Robert, N. Stavins (2008). "environmental economics,"*The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract & article.

MODULE 2: HEALTH CARE FINANCING AND IMPLICATIONS TO HEALTH CARE DELIVERY

Unit 1: Health Care Financing

Content

1.0 INTRODUCTION

The way a health system is financed shows if the people get the needed health care and whether they suffer financially at the point of receiving care. A good healthcare financing strategies must be able to mobilize resources for healthcare; achieve equity and efficiency in use of healthcare spending; ensure that healthcare is affordable and of high quality; ensure that essential healthcare goods and services are adequately provided for and most recently ensure that the money is spent wisely so that the millennium development goals (MDGs) could be achieved.

2.0 OBJECTIVES

At the end of this unit, a student should be able to:

1 Explain Health care financing

2 List four concept in Health care financing

MAIN CONTENT

3.1 Meaning of Health care financing

Health care financing system is a process by which revenues are collected from primary and secondary sources, e.g., out-of-pocket payments (OOPs), indirect and direct taxes, donor funding, co-payment, voluntary prepayments, mandatory prepayment, which are accumulated in fund pools so as to share risk across large population groups and using the revenues to purchase goods and services from public and private providers for identified needs of the population, e.g., fee for service, capitation, budgeting and salaries.

Ultimately, whether through OOPs, taxation or health insurance, financing for the health system originates mostly from the households. Therefore in a most basic form, health care financing represents a flow of funds from patients to health care providers in exchange for services. The way a health system is financed shows if the people get the needed health care and whether they suffer financially at the point of receiving care.

3.2 Concept in Health Financing

1. Health benefit ratio
2. Long Term Debt
3. Operating Income
4. Operating Margin

4.0CONCLUSION

In this unit, you learnt the meaning of Health care financing and it concept

5.0 SUMMARY

Health care financing system is a process by which revenues are collected from primary and secondary sources, e.g., out-of-pocket payments (OOPs), indirect and direct taxes, donor funding, co-payment, voluntary prepayments, mandatory prepayment, which are accumulated in fund pools so as to share risk across large population groups and using the revenues to purchase goods and services from public and private providers for identified needs of the population, e.g., fee for service, capitation, budgeting and salaries.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain Health care financing
2. Itemize four concept of Health Financing

Solution

1. Health care financing system is a process by which revenues are collected from primary and secondary sources, e.g., out-of-pocket payments (OOPs), indirect and direct taxes, donor funding, co-payment, voluntary prepayments, mandatory prepayment, which are accumulated in fund pools so as to share risk across large population groups and using the revenues to purchase goods and services from public and private providers for identified needs of the population, e.g., fee for service, capitation, budgeting and salaries.

2. Concepts of health financing

1. Health benefit ratio

2. Long Term Debt
3. Operating Income
4. Operating Margin

7.0 REFERENCES

- Robert N. Stavins (2008). "environmental economics,"*The New Palgrave Dictionary of Economics*, 2nd Edition. Abstract & article.
- Maureen L. Cropper and Wallace E. Oates (1992). "Environmental Economics: A Survey,"*Journal of Economic Literature*, 30(2), pp. 675-740.

UNIT 2: IMPLICATIONS OF HEALTH CARE FINANCING

Content

1.0 INTRODUCTION

In Nigeria, revenue for financing the health sector is collected majorly from pooled and un-pooled sources. The pooled sources are collected from budgetary allocation, direct and indirect taxation as well as donor funding. However, the un-pooled sources contribute over 70% of total health expenditure (THE) and this can be: OOPs in the forms of fees (informal or formal direct payments to healthcare providers at the time of service) about 90% and payments for goods (medical products such as bed-nets, or condoms) and about 10%. Despite these health financing options in Nigeria, the finances are still disproportionately distributed across the health system and with regional inequity in healthcare expenditure.

2.0 OBJECTIVES

At the end of this unit, the student should be able to:

1. Define Health and
2. State the Implications of Health care financing

3.0 MAIN CONTENT

3.1 Definition of Health

The WHO defines health as a complete physical, mental and social well-being and not merely the absence of disease or infirmity by introducing a new concept of health as the ability to adapt and –self manage, in the face of social, physical and emotional challenges.

3.2 Implications of Health care financing

A good healthcare financing strategies must be able to mobilize resources for healthcare; achieve equity and efficiency in use of healthcare spending; ensure that healthcare is affordable and of high quality; ensure that essential healthcare goods and services are adequately provided for and most recently ensure that the money is spent wisely so that the millennium development goals (MDGs) could be achieved.

A health care financing mechanism should provide sufficient financial protection so that no household is impoverished because of a need to use health services. One-way of providing such protection is by incorporating a risk-sharing plan in the health care financing mechanism, whereby the risk of incurring unexpected health care expenditure does not fall solely on an individual or household. One aim of Universal Health Coverage (UHC) is how to ensure that all have adequate access to their health care needs without making significant option at the point of receiving care. One-way to achieve this is through risk pooling either through tax-funded or Social Health Insurance

(SHI). Introduction of National Health Insurance Scheme (NHIS): A SHI program, is one-way countries can enhance universal coverage. The NHIS was introduced in Nigeria in 2005 to guarantee accessibility to healthcare for Nigerians. Since the inception NHIS, only those employed in federal formal sector, which <5% of the working population of Nigeria have been enrolled. The plan was that state governments will adopt the program for their employees, and this action promise to expand the coverage of the insurance scheme. However, 9 years after its inauguration, only two states have adopted the program. Therefore, efforts are being made to devise a strategy to extend the coverage to other states as well as those employed in other formal sector outside this federal formal sector, as well as those employed in the informal sector. If such is achieved, the primary aim of NHIS, which is universal coverage, can then be achieved. Several approaches have been suggested of how to improve universal coverage in areas where those employed in formal sector are small. Among the options are "contributory schemes" like Community-Cased Health Insurance (CBHI), where households in a particular community contribute to insurance scheme; another is tax-funded health scheme, where health services for those outside are funded from tax.

The way a country finances its health care system is a critical determinant for reaching UHC. This is so because they determine whether health services exist and are available and whether people can afford to use health services when they need them. This can be achieved by a well-planned combination of all healthcare financing mechanisms, which include: Tax-based financing, donor funding, health insurance exemptions, deferrals and subsidies. The main thrust is how to generate adequate revenue to finance health services from a diversified group of people, without over tasking the formal sector workers. Since in Nigeria, the formal sector workers are the group that their contributions are its tax or agreed deduction, can easily be access from source and this

constitutes 47% of the working population. The situation is different when informal sector (about 53% of the working population) is considered, due to infective tax collection system, inefficient formula to calculate the amount to collect, and lack of confidence on those that will be mandated to collect the fund.

In Nigeria, revenue for financing the health sector is collected majorly from pooled and un-pooled sources. The pooled sources are collected from budgetary allocation, direct and indirect taxation as well as donor funding. However, the un-pooled sources contribute over 70% of Total Health Expenditure (THE) and this can be: in the forms of fees (informal or formal direct payments to healthcare providers at the time of service) about 90% and payments for goods (medical products such as bed-nets, or condoms) and about 10%. Despite these health financing options in Nigeria, the finances are still disproportionately distributed across the health system and with regional inequity in healthcare expenditure.

Therefore, achieving successful health care financing system continues to be a challenge in Nigeria. This review draws on available and relevant literature to provide an overview and the state of public health care financing in Nigeria.

4.0 CONCLUSION

In this unit you learnt, about the definition of health and implications of Health care financing in Nigeria.

5.0 SUMMARY

The way a country finances its health care system is a critical determinant for reaching UHC. This is so because they determine whether health services exist and are available and whether people can afford to use health services when they need them. This can be achieved by a well-planned combination of all

healthcare financing mechanisms, which include: Tax-based financing donor funding, health insurance exemptions, deferrals and subsidies. The main thrust is how to generate adequate revenue to finance health services from a diversified group of people, without over tasking the formal sector workers. Since in Nigeria, the formal sector workers are the group that their contributions are its tax or agreed deduction, can easily be access from source and this constitutes 47% of the working population. The situation is different when informal sector (about 53% of the working population) is considered, due to infective tax collection system, inefficient formula to calculate the amount to collect, and lack of confidence on those that will be mandated to collect the fund.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define Health
2. State the implications of Health care financing in Nigeria

Solution

1. The WHO defines health as a complete physical, mental and social well-being and not merely the absence of disease or infirmity by introducing a new concept of health as the ability to adapt and –self manage, in the face of social, physical and emotional challenges.

2. A good healthcare financing strategies must be able to mobilize resources for healthcare; achieve equity and efficiency in use of healthcare spending; ensure that healthcare is affordable and of high quality; ensure that essential healthcare goods and services are adequately provided for and most recently ensure that the money is spent wisely so that the Millennium Development Goals (MDGs) could be achieved.

A health care financing mechanism should provide sufficient financial protection so that no household is impoverished because of a need to use health services. One-way of providing such protection is by incorporating a risk-sharing plan in the health care financing mechanism, whereby the risk of incurring unexpected health care expenditure does not fall solely on an individual or household. One aim of Universal Health Coverage (UHC) is how to ensure that all have adequate access to their health care needs without making significant option at the point of receiving care. One-way to achieve this is through risk pooling either through tax-funded or social health insurance (SHI). Introduction of National Health Insurance Scheme (NHIS): A SHI program, is one-way countries can enhance universal coverage. The NHIS was introduced in Nigeria in 2005 to guarantee accessibility to healthcare for Nigerians. Since the inception NHIS, only those employed in federal formal sector, which <5% of the working population of Nigeria have been enrolled. The plan was that state governments will adopt the program for their employees, and this action promise to expand the coverage of the insurance scheme. However, 9 years after its inauguration, only two states have adopted the program. Therefore, efforts are being made to devise a strategy to extend the coverage to other states as well as those employed in other formal sector outside this federal formal sector, as well as those employed in the informal sector. If such is achieved, the primary aim of NHIS, which is universal coverage, can then be achieved.

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UNIT 3: NATIONAL HEALTH SCHEME

CONTENT

1.0 INTRODUCTION

The WHO report further stated that Nigeria accounts for 10 per cent of global maternal mortality figure, with 59,000 women dying annually from pregnancy and child birth1. It adds that for every maternal death, 30 others suffer long term disabilities while 40 percent of global obstetric fistulas occur in Nigeria. The frightening report described the health situation in the country as being so deplorable because only 39 per cent of births are delivered by skilled health professionals.

2.0OBJECTIVES

At the end of this unit, student will be knowledgeable on

1.The National Insurance Scheme

2 The Objectives of NHIS

3.0MAIN CONTENT

3.1 The National Insurance Scheme

According to the World Health Organization (WHO), in 2005, Nigeria was ranked 197th out of 200 nations. Life expectancy was put at 48 years for males and 50 years for females; while Healthy Life Expectancy (HALE) for both sexes was put at 42years. In HALE estimation, Nigeria only ranked higher than five countries; Sierra Leone, Afghanistan, Zimbabwe, Zambia and Lesotho1. The WHO report further stated that Nigeria accounts for 10 per cent of global maternal mortality figure, with 59,000 women dying annually from pregnancy and child birth1. It adds that for every maternal death, 30 others suffer long term disabilities while 40 percent of global obstetric fistulas occur in Nigeria. The frightening report described the health situation in the country as being so deplorable because only 39 per cent of births are delivered by skilled health professionals. It also stated that the risk of a woman dying from child birth is 1 in 18 in Nigeria compared to 1 in 61 for all developing countries and 1 in 800 in developed countries, adding that only 23 per cent of children (12- 23months) receive full course of immunisation against childhood killer diseases. However, reducing child and maternal mortality rates are part of the Millennium Development Goals (MDG) which the Nigerian government is committed to. It targets a reduction of the mortality of children under the age of five by two-thirds between 2000 and 2015, that is, from 207 in 2000 to 67 by 2015. In the same vein, MDG also targets a 75 per cent decline in maternal mortality rate by 2015, that is, from 704 in 2000 to about 176 in 2015. It is therefore, obvious that unless there is a quick intervention, Nigeria will get to 2015 without a change in her health status. That is where the National Health Insurance Scheme (NHIS) comes in. The NHIS represents a very promising sustainable healthcare financing strategy. The agency can work progressively towards achieving universal health insurance coverage for all Nigerians. As the cost of healthcare

increases, it has become increasingly important for people to obtain health insurance to maintain access to preventive and emergency health care and afford treatment. Health insurance is a social security system that guarantees the provision of needed health services to persons on the payment of token contributions at regular intervals. The National Health Insurance Scheme (NHIS) is a body corporate established under Act 35 of 1999 by the Federal Government of Nigeria to improve the health of all Nigerians at an affordable cost. Given the general poor state of the nation's health services and the excessive dependence and pressure on Government owned health facilities, with the dwindling funding of healthcare in the face of rising cost, the Scheme is designed to facilitate fair financing of health care costs through pooling and judicious utilisation of financial risk protection and cost-burden sharing for people, against high cost of health care through institution of prepaid mechanism, prior to their falling ill. This is in addition to the provision of regulatory oversight on Health Maintenance Organisations (HMOs) and Health Care Providers (HCPs). Several health insurance schemes exist around the world. In Africa we have success stories in Rwanda, Kenya, Ghana, South Africa to reduce the burden of healthcare on the populace. This write up serves to highlight the history of NHIS, progress made so far, challenges and recommendations for the way forward towards achieving universal coverage. History of NHIS Scheme was officially launched on 6th June 2005 and commencement of services to enrollees started in September 20051. Till date, over 4 million Identity Cards have been issued, 62 HMOs have been accredited and registered. Presently, 5,949 Healthcare Providers, 24 Banks, 5 Insurance Companies and 3 Insurance Brokers have also been accredited and registered1. In the list of states that have so far shown their interests are: Rivers, FCT, Benue.

3.2 Objectives of the Scheme

1. To ensure that every Nigerian has access to good health care services.
2. To protect families from the financial hardship of huge medical bills.
3. To limit the rise in the cost of health care services.
4. To ensure equitable distribution of health care costs among different income groups.
5. To maintain high standards of health care delivery services within the Scheme.
6. To ensure efficiency in health care services.
7. To improve and harness private sector participation in the provision of health care services.
8. To ensure equitable distribution of health facilities within the Federation.
9. To ensure appropriate patronage of all levels of health care.
10. To ensure the availability of funds to the health sector for improved services.

4.0CONCLUSION

In this unit you learnt about the National Health Insurance Scheme and its Objectives.

5.0SUMMARY

The NHIS represents a very promising sustainable healthcare financing strategy. The agency can work progressively towards achieving universal health insurance coverage for all Nigerians. As the cost of healthcare increases, it has become increasingly important for people to obtain health insurance to maintain access to preventive and emergency health care and afford treatment. Health insurance is a social security system that guarantees the provision of needed health services to persons on the payment of token contributions at regular intervals. The National Health Insurance Scheme (NHIS) is a body corporate established under Act 35 of 1999 by the Federal Government of Nigeria to improve the health of all Nigerians at an affordable cost.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the Concept of National Health Insurance Scheme (NHIS)
2. State the Objectives of the NHIS Scheme

Solution

1. The NHIS represents a very promising sustainable healthcare financing strategy. The agency can work progressively towards achieving universal health insurance coverage for all Nigerians. As the cost of healthcare increases, it has become increasingly important for people to obtain health insurance to maintain access to preventive and emergency health care and afford treatment. Health insurance is a social security system that guarantees the provision of needed health services to persons on the payment of token contributions at regular intervals. The National Health Insurance Scheme (NHIS) is a body corporate established under Act 35 of 1999 by the Federal Government of Nigeria to improve the health of all Nigerians at an affordable cost. Given the general poor state of the nation's health services and the excessive dependence and pressure on Government owned health facilities, with the dwindling funding of healthcare in the face of rising cost, the Scheme is designed to facilitate fair financing of health care costs through pooling and judicious utilisation of financial risk protection and cost-burden sharing for people, against high cost of health care through institution of prepaid mechanism, prior to their falling ill. This is in addition to the provision of regulatory oversight on Health Maintenance Organisations (HMOs) and Health Care Providers (HCPs).

2. Objectives of NHIS

1. To ensure that every Nigerian has access to good health care services.
2. To protect families from the financial hardship of huge medical bills.
3. To limit the rise in the cost of health care services.

4. To ensure equitable distribution of health care costs among different income groups.
5. To maintain high standards of health care delivery services within the Scheme.
6. To ensure efficiency in health care services.

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MODULE 3: COST RECOVERY STRATEGIES

UNIT 1: COST RECOVERY STRATEGIES

CONTENTS

1.0 Introduction

Founders of a company are interested in evaluating and optimizing the benefit of their effort, especially their capital. Without moving too extensively into the subject, start by evaluating the return on investment of anything: the business as a whole, a piece of equipment, even a hired employee. Even more, an entrepreneur is truly interested in return on equity; explained simply as the

return on their investment interest. This differs from return on investment which measures the return on the entire investment.

2.0 Objectives

At the end of this unit, students should be able to:

1. Define Cost recovery
2. State the method of Cost recovery
3. Give examples of Cost recovery

3.0 Main Content

3.1 Meaning of Cost recovery

Cost recovery is defined as the method to recovering an expenditure which a business takes on, is both a specific and general term. Generally, cost recovery is simply recovering the costs of any given expense. This can be the initial startup costs of the business by meeting and exceeding the break even point, the cost of an investment through evaluating the return on investment, or even the cost of capital taken to finance the firm. Specifically, the cost recovery method of accounting gains back the cost of an investment by relying on the certified depreciation schedule of the item.

Cost recovery, explained simply as regaining the value of an expenses, is an important concept for accountants and company founders alike. Each of these parties are interested in cost recovery solutions.

3.2 Methods of Cost recovery

For entrepreneurs, cost recovery methods are an important concept. Founders of a company are interested in evaluating and optimizing the benefit of their effort, especially their capital. Without moving too extensively into the subject, start

by evaluating the return on investment of anything: the business as a whole, a piece of equipment, even a hired employee. Even more, an entrepreneur is truly interested in return on equity; explained simply as the return on their investment interest. This differs from return on investment which measures the return on the entire investment.

3.2.1 Cost Recovery Accounting

For accountants, cost recovery accounting means gaining back the value of an expense. Accountants do this mainly through depreciation; using depreciation tax law to minimize the taxes paid, thus increasing final profit for the firm. These accountants study tax law to find the rules which result in the greatest benefit for their employer. Ultimately, a tax law expert will be the best at achieving this goal.

3.3 Examples of Cost recovery

Yazeed is a tax accountant for a fortune 500 company. Unlike where many accountants deal with the everyday expenses, projects, and various operations of the business, he does not. Yazeed has one focus: optimizing cost recovery deductions by minimizing the tax expense of her company. He is a tax accountant and loves to save his firm money. Now, Yazeed is working on the cost recovery model of depreciation. He understands the laws well and follows a strict system to assure that she is processing company records properly. Yazeed is a creature of habit.

At a networking event, Yazeed heard about a tax law change that just happened this month. Even though he has done a great job so far, he wants to use this to make even more profit for his employer. After the event, he rushes back to work to see what value she can create.

4.0 Conclusion

In this unit, students had learnt so far the meaning of cost recovery, methods of cost recovery and example of cost recovery among others.

5.0 Summary

For accountants, cost recovery accounting means gaining back the value of an expense. Accountants do this mainly through depreciation; using depreciation tax law to minimize the taxes paid, thus increasing final profit for the firm. These accountants study tax law to find the rules which result in the greatest benefit for their employer. Ultimately, a tax law expert will be the best at achieving this goal.

6.0 Tutor-Marked Assignments

1. What is cost recovery?
2. Explain the method of cost recovery.

Solution

1. Cost recovery, defined as the method to recovering an expenditure which a business takes on, is both a specific and general term. Generally, cost recovery is simply recovering the costs of any given expense. This can be the initial startup costs of the business by meeting and exceeding the break even point, the cost of an investment through evaluating the return on investment, or even the cost of capital taken to finance the firm. Specifically, the cost recovery method of accounting gains back the cost of an investment by relying on the certified

depreciation schedule of the item. Cost recovery, explained simply as regaining the value of an expenses.

2. Method of cost recovery

For entrepreneurs, cost recovery methods are an important concept. Founders of a company are interested in evaluating and optimizing the benefit of their effort, especially their capital. Without moving too extensively into the subject, start by evaluating the return on investment of anything: the business as a whole, a piece of equipment, even a hired employee. Even more, an entrepreneur is truly interested in return on equity; explained simply as the return on their investment interest. This differs from return on investment which measures the return on the entire investment.

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UNIT 2 PRIVATE SECTOR PARTICIPATION

1.0 Introduction

In recent decades, many countries have embarked on structural reform programs involving Private Sector Participation (PSP) across the entire value chain of the power sector. Often as part of a broader market oriented reform program, governments have resorted to PSP in Transmission and Distribution (T and D) for a variety of reasons, including to: (i) offset years of underinvestment and poor operating performance under public ownership; (ii) attract considerable private investment to fill the financing gap stemming from new T and D additions amid rapidly growing demand for electricity; and (iii) raise fiscal revenues by offloading state assets. In some cases (for example, Brazil and Peru), a prolonged electricity supply crisis prompted government into structural reforms of the T and D sector. The Energy Sector Management Assistance

Program (ESMAP) study covers PSP in transmission, as well as distribution. The four case-study countries, Brazil, Peru, Philippines, and Turkey were selected based on the substantial transmission story under their broader electricity PSP experience

2.0Objectives

At the end of this unit, students should be able to explain Private Sector Participation.

3.0 Main Contents

3.1 Private Sector Participation

Covers a wide spectrum of legal arrangements in which private enterprises are involved in the provision of services that elsewhere are or hitherto have been provided by government agencies. There is always some link with, or accountability to a government or public body.

In recent decades, many countries have embarked on structural reform programs involving private sector participation (PSP) across the entire value chain of the power sector. Often as part of a broader market oriented reform program, governments have resorted to PSP in transmission and distribution (T and D) for a variety of reasons, including to: (i) offset years of underinvestment and poor operating performance under public ownership; (ii) attract considerable private investment to fill the financing gap stemming from new T and D additions amid rapidly growing demand for electricity; and (iii) raise fiscal revenues by offloading state assets. In some cases (for example, Brazil and Peru), a prolonged electricity supply crisis prompted government into structural reforms of the T and D sector. The energy sector management assistance program (ESMAP) study covers PSP in transmission, as well as distribution. The four

case-study countries, Brazil, Peru, Philippines, and Turkey were selected based on the substantial transmission story under their broader electricity PSP experience

4.0.Conclusion

Students have learnt about the Private Sector Participation**.**

5.0 **Summary**

Covers a wide spectrum of legal arrangements in which private enterprises are involved in the provision of services that elsewhere are or hitherto have been provided by government agencies. There is always some link with, or accountability to a government or public body.

6.0 Tutor-Marked Assignments

1. Explain the term private sector participation.

Solution

A wide spectrum of legal arrangements in which private enterprises are involved in the provision of services that elsewhere are or hitherto have been provided by government agencies. There is always some link with, or accountability to a government or public body. The private sector plays an important role in the delivery of initiatives and the operation of transport systems. The private sector is increasingly participating in the operational side of transport (e.g. private bus routes in urban areas, rail freight) as well as being directly involved in the financing and operation of transport infrastructure initiatives (e.g. toll roads). Private sector participation is common through Public Private Partnerships (PPPs)

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MODULE 4: SOCIO-ECONOMIC COST OF ILL HEALTH

Unit 1 Socio-economic Cost of Ill Health

1.0 Introduction

Mental health tends to deteriorate significantly when people leave employment and improve again when people move back into employment. According to a calculation made at the Finnish Ministry of Social Affairs and Health, the costs of work related diseases and occupational accidents were nearly 3 billion € in 2000 or nearly 2% of GDP. Almost half of the losses were caused by reduced production input resulting from disability. A research project in Germany showed that the costs of work-related diseases amount at least to 28 billion Euro. These figures are based on 15 billion euro direct costs (disease treatment) and 13 billion euro indirect costs (loss of productivity years by sick leave). The work-related aspects "heavy work/lifting" and "low control" account for the

biggest share with respect to attributive risks and direct 26 and indirect costs. The fact that musculoskeletal disorders and psychosocial diseases are responsible for most of the costs is confirmed by other studies.

2.0 Objectives:

At the end of this unit students should be able to:

1. Explain the Socio-economic cost of ill Health
2. What is the cost of health related disease with reference

3.0 Main Content

3.1 Socio-economic cost of ill Health

Ill-health has a negative impact on economic growth. Ridge, studied the link between health and economic performance. They investigated whether health in general, and ill-health caused by work in particular, has an impact on various measures of economic performance such as GDP (Gross Domestic Product) growth, productivity and the level of employment. The results show that if the proportion of people with ill-health increases, economic growth will slow down. Furthermore, work-related factors play an important role since 11% of the impact of general health on economic performance is attributable to work-related ill-health. On the other hand, the opposite is also true. Health is a strong predictor of economic growth. Health leads to economic growth by increased savings, investment in human capital, labour market participation, foreign direct investment and productivity growth. However, the relation and influence of health on economy (and economic growth) is complex. It is clear that human capital matters for economic outcomes and since health is an important component of human capital, health also matters for economic outcomes. At the same time, economic outcomes matter for health. These interfering mechanisms

make it difficult to determine the impact of health on the economy. Countries with the best records on accidents at work are the most competitive leading to the conclusion that poor working conditions put a heavy burden on the economy and hinder economic growth. Furthermore, social insurance expenditure on occupational safety and health constitutes an important sum.. These benefits comprise cash benefits on account of complete or partial inability to participate gainfully in the labour market due to disability. It includes expenditures such as statutory sick pay, disability allowances, industrial injuries disablement and incapacity benefits. Work-related factors cannot be ignored in this regard. One major explanation for the increasing number of inflows into disability benefits on grounds of mental health conditions can be attributed to changes in the workplace that have increased the prevalence of work related stress. However, work is also beneficial to mental health. Mental health tends to deteriorate significantly when people leave employment and improve again when people move back into employment. The fact that the cost of accidents at work and work-related ill-health accounts for 2 to 4% of the GDP can be found in a several estimates on the economic impact. The work-related aspects "heavy work/lifting" and "low control" account for the biggest share with respect to attributive risks and direct 25 cent of the world's GDP. Furthermore, social insurance expenditure on occupational safety and health constitutes an important sum. On average, OECD countries spend 2.4% of GDP on incapacity-related benefits. These benefits comprise cash benefits on account of complete or partial inability to participate gainfully in the labour market due to disability. It includes expenditures such as statutory sick pay, disability allowances, industrial injuries disablement and incapacity benefits. Mental health problems are now the biggest single cause for a disability benefit claim in most countries and countries such as Denmark, the Netherlands, Sweden and Switzerland accounting for almost half of all new claims. Work-related factors cannot be ignored in this regard. One major explanation for the increasing number of

inflows into disability benefits on grounds of mental health conditions can be attributed to changes in the workplace that have increased the prevalence of work related stress. However, work is also beneficial to mental health. Mental health tends to deteriorate significantly when people leave employment and improve again when people move back into employment. According to a calculation made at the Finnish Ministry of Social Affairs and Health, the costs of work related diseases and occupational accidents were nearly 3 billion € in 2000 or nearly 2% of GDP. Almost half of the losses were caused by reduced production input resulting from disability. A research project in Germany showed that the costs of work-related diseases amount at least to 28 billion Euro. These figures are based on 15 billion euro direct costs (disease treatment) and 13 billion euro indirect costs (loss of productivity years by sick leave). The work-related aspects "heavy work/lifting" and "low control" account for the biggest share with respect to attributive risks and direct 26 and indirect costs. The fact that musculoskeletal disorders and psychosocial diseases are responsible for most of the costs is confirmed by other studies. Koningsveld states that 83% of the cost of work-related health issues in the Netherlands is due to these diseases.. Due to the work-related risk factors that correlate with these diseases, the authors found that especially the health care sector, the transport sector and the construction (rsi) suffer the consequences of these costs.

Leigh (2004) carried out a study based on nationwide data (US) considering the cost for medical care, lost productivity, and pain and suffering as the main outcome measure. The analysis calculated the costs for a detailed list of sectors. Results showed that the following sectors were at the top of the list for average cost (cost per worker): taxicabs (11,528$/worker), bituminous coal and lignite mining (8,600$), logging (7,009$), crushed stone (4,024$), oil field services (3938$), water transportation services (3,365$), sand and gravel (3,365$), and trucking (3350$). Industries high on the total-cost list were trucking, eating and

drinking places, hospitals, grocery stores, nursing homes, motor vehicles, and department stores. Industries at the bottom of the cost-per worker list included legal services (138$), security brokers (137$), mortgage bankers (136$), security exchanges (137$), and labour union offices (86$). 2.2.3 Conclusions Statistical data show that no less than 1 out of 10 European workers is every year affected by an accident at work or a work-related health problem. Health problems are more important and their occurrence is increasing. Both accidents and ill-health problems cause vast numbers of days of sick leave. In a limited, but nevertheless important, number of cases, workers are facing long periods of absence and permanent disabilities. Furthermore, work-related health problems have an effect on early retirement which in light of demographic change support the case of healthy ageing policies targeting the workplace. Accidents at work and work-related ill-health place an important burden on global economy and hinder economic growth. Outcomes of poor working conditions are negatively linked to economic indicators such as competitiveness showing that health is a strong driver for economic growth. This is further demonstrated by the loss that emerges from accidents at work and work-related ill-health. According to the European Agency for Safety and Health at Work in Bilbao the costs from Member States of all work related accidents and diseases range from 2.6% to 3.8% of GDP. Studies in several countries provide similar estimates. These figures show the potential benefit if these cases of accidents at work and work related ill-health could have been prevented. Thus preventing occupational accidents and diseases should make economic sense for society as well as being good business practice for companies. Each of these target levels is confronted with the economic consequences. Yet, what might be a cost for the individual is not necessarily perceived as a cost for society and vice versa. Both accidents and ill-health problems cause vast numbers of days of sick leave. In a limited, but nevertheless important, number of cases, workers are facing long periods of absence and permanent disabilities. Furthermore, work-related health problems

have an effect on early retirement which in light of demographic change support the case of healthy ageing policies targeting the workplace. Accidents at work and work-related ill-health place an important burden on global economy and hinder economic growth. Outcomes of poor working conditions are negatively linked to economic indicators such as competitiveness showing that health is a strong driver for economic growth. This is further demonstrated by the loss that emerges from accidents at work and work-related ill-health. According to the European Agency for Safety and Health at Work in Bilbao the costs from Member States of all work related accidents and diseases range from 2.6% to 3.8% of GDP. Studies in several countries provide similar estimates. These figures show the potential benefit if these cases of accidents at work and work related ill-health could have been prevented. Thus preventing occupational accidents and diseases should make economic sense for society as well as being good business practice for companies.

4.0 Conclusion

Students had learnt about Socio-economic cost of ill Health.

5.0 Summary

Health is a strong predictor of economic growth. Health leads to economic growth by increased savings, investment in human capital, labour market participation, foreign direct investment and productivity growth. However, the relation and influence of health on economy (and economic growth) is complex. It is clear that human capital matters for economic outcomes and since health is an important component of human capital, health also matters for economic outcomes. At the same time, economic outcomes matter for health. These interfering mechanisms make it difficult to determine the impact of health on the economy. Countries with the best records on accidents at work are the most

competitive leading to the conclusion that poor working conditions put a heavy burden on the economy and hinder economic growth. Furthermore, social insurance expenditure on occupational safety and health constitutes an important sum.. These benefits comprise cash benefits on account of complete or partial inability to participate gainfully in the labour market due to disability. It includes expenditures such as statutory sick pay, disability allowances, industrial injuries disablement and incapacity benefits. Work-related factors cannot be ignored in this regard.

6.0 Tutor-Marked Assignment

1. Define the term socio-economic cost of ill Health.

Solution

Socio-economic cost of ill-health caused by work in particular, has an impact on various measures of economic performance such as GDP (Gross Domestic Product) growth, productivity and the level of employment. The results show that if the proportion of people with ill-health increases, economic growth will slow down. Furthermore, work-related factors play an important role since 11% of the impact of general health on economic performance is attributable to work-related ill-health. On the other hand, the opposite is also true. Health is a strong predictor of economic growth.

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UNIT 2 FACTORS AFFECTING ACCESS TO HEALTH SERVICES

Content

1.0 Introduction

Healthcare must take into account the occurrence, frequency, death, burden of diseases, and other unfavourable health conditions that exist among specific population groups, racial, and ethnic minorities (US Department of Health and Human Services, 2010).Minorities are in poorer health, experience more obstacles in obtaining health care, are uninsured, and have a greater risk of receiving poor quality health care.

2.0 Objectives

At the end of this unit, students should be able to:

1. Define Access to Health Services.
2. State the factors affecting access to Health Services.

3.0 Main Contents

3.1 Definition of Access to Health Services

Access to health care refers to the ability to obtain needed health services. All health care must not vary in quality due to gender, ethnicity, geographic location, or socioeconomic status. Healthcare must take into account the occurrence, frequency, death, burden of diseases, and other unfavourable health conditions that exist among specific population groups, racial, and ethnic minorities (US Department of Health and Human Services, 2010).Minorities are in poorer health, experience more obstacles in obtaining health care, are uninsured, and have a greater risk of receiving poor quality health care.

3.2 Factors Affecting Access to Health Services

There are a variety of factors that can hinder access to care.

1. Cost of medical treatments

2. Lack of insurance coverage

3. Socioeconomic status

4. Age

5. Education level

6. Race, ethnicity, and immigrant status

7. Gender

8. Location of health care facilities and doctors

9. Decreased health care workforce

10. Structural issues

11. Linguistic barriers and health disparities

4.0 Conclusion

Students had learnt about the meaning of access to Health Services and factors affecting access to Health Services.

5.0 Summary

Minorities are in poorer health, experience more obstacles in obtaining health care, are uninsured, and have a greater risk of receiving poor quality health care.

6.0Tutor-Marked Assignments

1 What is access to Health Services?

2 List the factors affecting access to health Services.

Solution

1. Access to health care refers to the ability to obtain needed health services. All health care must not vary in quality due to gender, ethnicity, geographic location, or socioeconomic status.

Healthcare must take into account the occurrence, frequency, death, burden of diseases, and other unfavourable health conditions that exist among specific population groups, racial, and ethnic minorities (US Department of Health and Human Services, 2010).

Minorities are in poorer health, experience more obstacles in obtaining health care, are uninsured, and have a greater risk of receiving poor quality health care.

2. There are a variety of factors that can hinder access to care.

1. Cost of medical treatments

2. Lack of insurance coverage

3. Socioeconomic status

4. Age

5. Education level

6. Race, ethnicity, and immigrant status

7. Gender

8. Location of health care facilities and doctors

9. Decreased health care workforce

10. Structural issues

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UNIT 3 ECONOMIC IMPLICATIONS OF DISEASES

Content

1.0 Introduction

A thorough understanding of the impact of disease on animal performance and economic loss is essential to make cost-effective recommendations to feedlot managers. The costs associated with death loss, chronically ill cattle marketed

prematurely at a discount, and treatment are obvious and easy to calculate. Hidden costs, such as reduced performance and lower carcass quality, are often overlooked.

2.0 Objectives

At the end of this unit, students should be able to :

1. Explain the Economic Implications of Diseases.
2. Discuss the following under economic implications of Diseases

    i. Man-hour
    ii. Daily's
    iii. Cost Efficient Analysis

3.0 Main Content

3.1 Economic Implications of Diseases.

Disease may cause economic loss in feedlots through mortality, treatment cost, or effects on productivity. The impact of clinical and subclinical disease on production efficiency and economic returns may be greater than the losses associated with mortality. A thorough understanding of the impact of disease on animal performance and economic loss is essential to make cost-effective recommendations to feedlot managers. The costs associated with death loss, chronically ill cattle marketed prematurely at a discount, and treatment are obvious and easy to calculate. Hidden costs, such as reduced performance and lower carcass quality, are often overlooked.

Treatment costs are another source of economic loss. Factors influencing the average cost include the morbidity rate, retreatment rate, cost of the drug(s), combination versus single antimicrobial therapy, whether adjunct therapy is

used, labor, and feedlot markup on the products used. The morbidity rate has the strongest influence on the average treatment cost for all cattle in the pen. When metaphylaxis is used to manage bovine respiratory tract disease, it must be added to the total medical cost for the pen.

3.2 Man-hour

A man-hour is the amount of work performed by the average worker in one hour. It is used for estimation of the total amount of uninterrupted labour required to perform a task. For example, researching and writing a college paper might require eighty man-hours, while preparing a family banquet from scratch might require ten man-hours.

Man-hours exclude the breaks that people generally require from work, e.g. for rest, eating, and other bodily functions. They count only pure labour. Managers count the man-hours and add break time to estimate the amount of time a task will actually take to complete. Thus, while one college course's written paper might require twenty man-hours to carry out, it almost certainly will not get done in twenty consecutive hours. Its progress will be interrupted by work for other courses, meals, sleep, and other distractions.

The advantage of the man-hour concept is that it can be used to estimate the impact of staff changes on the amount of time required for a task. This is done by dividing the number of man-hours by the number of workers available.

This is, of course, appropriate to certain types of activities. It is of most use when considering 'piece-work', where the activity being managed consists of discrete activities having simple dependencies, and where other factors can be neglected. Therefore, adding another person to a packaging team will increase the output of that team in a predictable manner. In transport industry, this concept is superseded by passenger-mile and tonne-mile for better costing

accuracy.

In reality, other factors intervene to reduce the simplicity of this model. If some elements of the task have a natural time span, adding more staff will have a reduced effect: although having two chefs will double the speed of some elements of food preparation, they roast a chicken no faster than one chef. Some tasks also have a natural number of staff associated with them: the time to chop the vegetables will be halved with the addition of the second chef, but the time to carve the chicken will remain the same.

Another example is the adage, "Just because a woman can make a baby in nine months, it does not follow that nine women can make a baby in one month." This adage is often cited in systems development to justify the belief that adding more staff to a project does not guarantee it will get done quicker.

Another problem with this model, as Fred Brooks noted, is that organization, training, and co-ordination activities could more than outweigh the potential benefits of adding extra staff to work on a task, especially if considered only over a shorter time period.

3.3 DALY's

The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death. It was developed in the 1990s as a way of comparing the overall health and life expectancy of different countries.

The DALY is becoming increasingly common in the field of public health and health impact assessment (HIA). It "extends the concept of potential years of life lost due to premature death... to include equivalent years of 'healthy' life lost by virtue of being in states of poor health or disability."[2] In so doing,

mortality and morbidity are combined into a single, common metric.

The disability-adjusted life year is a societal measure of the disease or disability burden in populations. DALYs are calculated by combining measures of life expectancy as well as the adjusted quality of life during a burdensome disease or disability for a population. DALYs are related to the quality-adjusted life year (QALY) measure; however QALYs only measure the benefit with and without medical intervention and therefore do not measure the total burden. Also, QALYs tend to be an individual measure, and not a societal measure.

Traditionally, health liabilities were expressed using one measure, the years of life lost (YLL) due to dying early. A medical condition that did not result in dying younger than expected was not counted. The years lost due to disability (YLD) component measures the burden of living with a disease or disability. DALYs are calculated by taking the sum of these two components

DALY = YLL + YLD

The DALY relies on an acceptance that the most appropriate measure of the effects of chronic illness is time, both time lost due to premature death and time spent disabled by disease. One DALY, therefore, is equal to one year of healthy life lost.

How much a medical condition affects a person is called the disability weight (DW). This is determined by disease or disability and does not vary with age. Tables have been created of thousands of diseases and disabilities, ranging from Alzheimer's disease to loss of finger, with the disability weight meant to indicate the level of disability that results from the specific condition.

Examples of disability weight

Condition	DW 2004	DW 2010
Alzheimer's and other dementias	0.666	0.666
Blindness	0.594	0.195
Schizophrenia	0.528	0.576
AIDS, not on ART	0.505	0.547
Burns 20%-60% of body	0.441	0.438
Fractured femur	0.372	0.308
Moderate depression episode	0.350	0.406
Amputation of foot	0.300	0.021-0.1674
Deafness	0.229	0.167-0.281
Infertility	0.180	0.026-0.056
Amputation of finger	0.102	0.030

Lower back pain	**0.061**	**0.322-0.374**

Source: Allen K and Clifford 1987

Examples of the disability weight are shown on the right. Some of these are "short term", and the long-term weights may be different.

The most noticeable change between the 2004 and 2010 figures for disability weights above are for blindness as it was considered the weights are a measure of health rather than well-being (or welfare) and a blind person is not considered to be ill. “The term disability is used broadly to refer to departures from optimal health in any of the important domains of health."

At the population level, the disease burden as measured by DALYs is calculated by adding YLL to YLD. YLL uses the life expectancy at the time of death. YLD is determined by the number of years disabled weighted by level of disability caused by a disability or disease using the formula:

In this formula I = number of incident cases in the population, DW = disability weight of specific condition, and L = average duration of the case until remission or death (years). There is also a prevalence (as opposed to incidence) based calculation for YLD. Number of years lost due to premature death is calculated by

YLL = N x L

where N = number of deaths due to condition, L = standard life expectancy at age of death.[8] Note that life expectancies are not the same at different ages. For example, in Paleolithic era, life expectancy at birth was 33 years, but life expectancy at the age of 15 was an additional 39 years (total 54).

Japanese life expectancy statistics are used as the standard for measuring premature death, as the Japanese have the longest life expectancies.

3.4. Cost-Effectiveness Analysis (CEA)

CEA is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action. Cost-effectiveness analysis is distinct from cost–benefit analysis, which assigns a monetary value to the measure of effect. Cost-effectiveness analysis is often used in the field of health services, where it may be inappropriate to monetize health effect. Typically the CEA is expressed in terms of a ratio where the denominator is a gain in health from a measure (years of life, premature births averted, sight-years gained) and the numerator is the cost associated with the health gain. The most commonly used outcome measure is quality-adjusted life years (QALY).

Cost–utility analysis is similar to cost-effectiveness analysis. Cost-effectiveness analyses are often visualized on a plane consisting of four-quadrants, the cost represented on one axis and the effectiveness on the other axis. Cost-effectiveness analysis focuses on maximizing the average level of an outcome, distributional cost-effectiveness analysis extends the core methods of CEA to incorporate concerns for the distribution of outcomes as well as their average level and make trade-offs between equity and efficiency, these more sophisticated methods are of particular interest when analyzing interventions to tackle health inequality

The concept of cost-effectiveness is applied to the planning and management of many types of organized activity. It is widely used in many aspects of life. In the acquisition of military tanks, for example, competing designs are compared not only for purchase price, but also for such factors as their operating radius, top speed, rate of fire, armor protection, and caliber and armor penetration of

their guns. If a tank's performance in these areas is equal or even slightly inferior to its competitor, but substantially less expensive and easier to produce, military planners may select it as more cost-effective than the competitor.

Conversely, if the difference in price is near zero, but the more costly competitor would convey an enormous battlefield advantage through special ammunition, radar fire control and laser range finding, enabling it to destroy enemy tanks accurately at extreme ranges, military planners may choose it instead – based on the same cost-effectiveness principle.

3.4.1 In pharmaco-economics

In the context of pharmaco economics, the cost-effectiveness of a therapeutic or preventive intervention is the ratio of the cost of the intervention to a relevant measure of its effect. Cost refers to the resource expended for the intervention, usually measured in monetary terms such as dollars or pounds. The measure of effects depends on the intervention being considered. Examples include the number of people cured of a disease, the mm Hg reduction in diastolic blood pressure and the number of symptom-free days experienced by a patient. The selection of the appropriate effect measure should be based on clinical judgment in the context of the intervention being considered.

A special case of CEA is cost–utility analysis, where the effects are measured in terms of years of full health lived, using a measure such as quality-adjusted life years or disability-adjusted life years. Cost-effectiveness is typically expressed as an Incremental Cost-Effectiveness Ratio (ICER), the ratio of change in costs to the change in effects.

A 1995 study of the cost-effectiveness of over 500 life-saving medical interventions found that the median cost per intervention was $42,000 per life-year saved. A 2006 systematic review found that industry-funded studies often

concluded with cost effective ratios below $20,000 per QALY and low quality studies and those conducted outside the US and EU were less likely to be below this threshold. While the two conclusions of this article may indicate that industry-funded ICER measures are lower methodological quality than those published by non-industry sources, there is also a possibility that, due to the nature of retrospective or other non-public work, publication bias may exist rather than methodology biases. There may be incentive for an organization not to develop or publish an analysis that does not demonstrate the value of their product. Additionally, peer reviewed journal articles should have a strong and defendable methodology, as that is the expectation of the peer-review process.

3.4.2 In energy efficiency investments

CEA has been applied to energy efficiency investments in buildings to calculate the value of energy saved in $/kWh. The energy in such a calculation is virtual in the sense that it was never consumed but rather saved due to some energy efficiency investment being made. Such savings are sometimes called megawatts. The benefit of the CEA approach in energy systems is that it avoids the need to guess future energy prices for the purposes of the calculation, thus removing the major source of uncertainty in the appraisal of energy efficiency investments.

Cost-Benefit Analysis (CBA) is an analytical way for society to make decisions about complicated issues such as education, health care, transportation, or the environment. Like most personal decisions, it involves a comparison of the costs of an action compared with considerations of the benefits of that action. However, for public policy it is formalized and quantitative. For instance, a public policy can be evaluated by calculating and weighing the benefits against the costs, once all factors have been given a common unit of measurement. When policymakers have to choose among various alternatives, they require a

tool that will allow them to distinguish between the options. Decision makers can then choose the policy with the largest surplus, or overall net benefits. For example, the U.S. government is increasingly seeking more cost-effective policies in order to balance the budget. Yet, while the overall concept of CBA is simple, the steps taken to evaluate each benefit and cost can become quite complicated.

The most important component of a CBA is the base situation—or what would happen if no changes were made. All other decisions are compared to this base situation. The first step is to identify the relevant time period: when would the costs and benefits be realized? Once the base and relevant time period are established, benefits and costs can be calculated in terms of human well-being. In this case, a benefit is defined as anything that increases human well-being, and a cost is anything that decreases it. These definitions and their respective calculations tend to provoke controversy due to the use of valuation and discounting, which involves applying a mathematical formula to determine the present value of future benefits and costs. For example, a dollar today will not be worth the same amount in 50 years, its value will decrease due to inflation. Also, today's dollar could be put to other uses (foregone opportunities) which decreases its net future value in the chosen use. To account for the inevitable change in value, costs and benefits in the future are 'discounted' – or made smaller – by the value of foregone opportunities.

Measuring the benefits of a policy can involve anything from additional income, to an increased quality of life, or even to a cleaner environment; costs may consist of forgone opportunities, internal and external costs, and externalities. However, in measuring costs, it is important not to confuse externalities with secondary effects: externalities result in real output changes whereas secondary effects do not. An example of this would be electricity generation, pollution is

an externality while a secondary effect would be the increased cost of doing business when the price of electricity rises. The pollution actually generates new costs, such as the need to scrub sulfur dioxide from smokestacks. The increased business costs reflect the fluctuation in the price. In order to avoid double-counting, only true externalities can be included in a CBA.

After all benefits and costs have been given a common unit of measurement, options can be evaluated. The ideal situation will result in Pareto improvement, some are made better-off while no one is made less well off. But—since this is rare—CBA is based on 'potential' Pareto improvement and economic efficiency, where the possibility exists for compensation to those who are less well off, whether or not it actually happens.

A final result of a CBA is where marginal benefits and marginal costs are equal. In the graph below, this is at point Q. The surplus is illustrated by the shaded area in the graph. At equilibrium, the surplus is greatest, making it the best possible solution. If the quantity were to increase to point 1, the marginal costs would exceed the marginal benefits, meaning it would not economically efficient. If the quantity were to decrease to point -1, some of the surplus would be lost, which would also indicate inefficiency. CBA aims to maximize economic efficiency at point Q, where marginal benefit and marginal cost are equal.

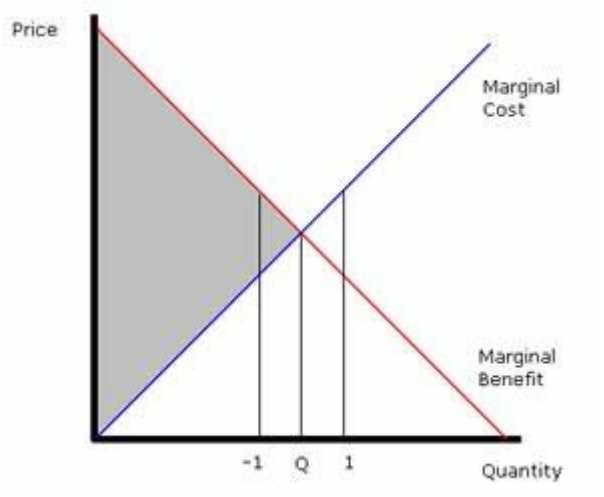

Fig 1: *Cost Benefit Analysis*

Source: Robert N and Stavins 2008

The uncertainty of these forecasts can create a fundamental problem when policymakers rely entirely on CBA to make a decision. Critics argue that the analysis does not take into account equity considerations. Ecological valuation and discounting are also controversial because there are many different values that certain natural resources could assume, and the discount rate chosen can have significant implications for the resulting analysis. These arguments are perhaps a good illustration of why CBA can best be used when combined with other forms of analysis.

4.0 Conclusion

Students have learnt economic implications of diseases in terms of man-hour, daily's and cost effectives analysis.

5.0 Summary

Measuring the benefits of a policy can involve anything from additional income, to an increased quality of life, or even to a cleaner environment; costs may consist of forgone opportunities, internal and external costs, and externalities.

However, in measuring costs, it is important not to confuse externalities with secondary effects: externalities result in real output changes whereas secondary effects do not. An example of this would be electricity generation, pollution is an externality while a secondary effect would be the increased cost of doing business when the price of electricity rises. The pollution actually generates new costs, such as the need to scrub sulfur dioxide from smokestacks. The increased business costs reflect the fluctuation in the price. In order to avoid double-counting, only true externalities can be included in a CBA.

After all benefits and costs have been given a common unit of measurement, options can be evaluated. The ideal situation will result in Pareto improvement, some are made better-off while no one is made less well off. But—since this is rare—CBA is based on 'potential' Pareto improvement and economic efficiency, where the possibility exists for compensation to those who are less well off, whether or not it actually happens.

6.0 Tutor-Marked Assignments

1. List and explain the economic implications of diseases
2. Explain Cost Benefit Analysis

Solution

1. Disease may cause economic loss in feedlots through mortality, treatment cost, or effects on productivity. The impact of clinical and subclinical disease on production efficiency and economic returns may be greater than the losses associated with mortality. A thorough understanding of the impact of disease on animal performance and economic loss is essential to make cost-effective recommendations to feedlot managers. The costs associated with death loss, chronically ill cattle marketed prematurely at a discount, and treatment are obvious and easy to calculate. Hidden costs, such as reduced performance and

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2. Cost-Benefit Analysis (CBA) is an analytical way for society to make decisions about complicated issues such as education, health care, transportation, or the environment. Like most personal decisions, it involves a comparison of the costs of an action compared with considerations of the benefits of that action. However, for public policy it is formalized and quantitative. For instance, a public policy can be evaluated by calculating and weighing the benefits against the costs, once all factors have been given a common unit of measurement. When policymakers have to choose among various alternatives, they require a tool that will allow them to distinguish between the options. Decision makers can then choose the policy with the largest surplus, or overall net benefits. For example, the U.S. government is increasingly seeking more cost-effective policies in order to balance the budget. Yet, while the overall concept of CBA is simple, the steps taken to evaluate each benefit and cost can become quite complicated.

7.0References

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