LEARNER GUIDE

Unit Standard Title:	**Apply knowledge of health economics to make an informed decision**
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Apply knowledge of health economics to make an informed decision

Introduction

Health economics is an applied field of study that allows for the systematic and rigorous examination of the problems faced in promoting health for all. By applying economic theories of consumer, producer and social choice, health economics aims to understand the behavior of individuals, health care providers, public and private organizations, and governments in decision-making.

Health economics is used to promote health through the study of health care providers, hospitals and clinics, managed care and public health promotion activities. Health economists apply the theories of production, efficiency, disparities, competition, and regulation to better inform the public and private sector on the most efficient, or cost-effective, and equitable course of action. Such research can include the economic evaluation of new technologies, as well as the study of appropriate prices, anti-trust policy, optimal public and private investment, and strategic behaviour.

When you have achieved this unit standard, you will be able to:

- Demonstrate knowledge and understanding of health economics in the provision of healthcare.
- Apply the principles of health economics to enable informed decision making.
- Explain the impact of the regulatory environment on health economics.
- Demonstrate knowledge and understanding of the role of pharmaco-economics in funding decisions.

Module 1

Health economics in the provision of healthcare

This Module deals with:

- The role of health economics in relation to the decision making process in the provision of healthcare.
- The role of health economics in the practice of evidence based medicine with reference to acceptance protocols.
- A specialist health economics evaluation on a health economics issue to justify an informed decision.
- The basics of health economics with reference to consumer rights and medical scheme responsibilities.
- Basic health economic theory with reference to generally accepted principles.

1.1 The role of Health Economics

Economics is the science of scarcity. The application of health economics reflects a universal desire to obtain maximum value for money by ensuring not just the clinical effectiveness, but also the cost-effectiveness of healthcare provision.

Cost-effectiveness implies either a desire to achieve a predetermined objective at least cost or a desire to maximise the benefit to the population of patients served from a limited amount of resources. An associated concept is that of efficiency, which measures how well resources are used in order to achieve a desired outcome. Opportunity cost represents a very useful mode of thought in health economics, as it emphasises the explicit trade-offs that underlie resource use in the health services.

All economic evaluations have a common structure which involves explicit measurement of inputs (‘costs’) and outcomes (‘benefits’).

Health economics can help to inform and improve decision-making as a systematic and objective system of thought.

Health economics can also be used to evaluate how certain social problems, such as market failure and inequitable allocation of resources, can impact on the health of a community or population.
Health economics can then be used to directly inform government on the best course of action with regards to regulation, national health packages, defining health insurance packages and other national health programs.

Resources in the health sector like other sectors are not enough to satisfy man's health wants. The main function of health economics is to apply economic theory to practical problems of rationing the use of resources for effective health care services. In response to people's needs and demand.

The very process of identifying alternative options to meet pre-specified objectives and balancing resources and benefits represents a valuable mode of thinking for decision-making, irrespective of whether formal economic evaluation is undertaken.

1.2 The role of Health Economics in evidence based Medicine

Evidence-based medicine (EBM) is the process of systematically reviewing, appraising and using clinical research findings to aid the delivery of optimum clinical care to patients. Increasingly, purchasers are looking to the strength of scientific evidence on clinical practice and cost-effectiveness when allocating resources. They are using this information to encourage GPs to adopt more clinically effective and cost-effective practices.

EBM forms part of the multifaceted process of assuring clinical effectiveness, the main elements of which are:

- Production of evidence through research and scientific review.
- Production and dissemination of evidence-based clinical guidelines.
- Implementation of evidence-based, cost-effective practice through education and management of change.
- Evaluation of compliance with agreed practice guidance and patient outcomes – this process includes clinical audit.

1.3 A specialist health economics evaluation

Economics is described as the study of the decisions people make about resources; a major role of a health economist is to provide this information to decision makers. Health economists call the process of gathering this information economic evaluation and the information is often collected during a trial or evaluation of an intervention (i.e. therapy or treatment).

This provides decision makers with the best evidence possible on which to base their decisions. An economist conducting an economic evaluation is typically interested in the resources required to fund an intervention and its alternatives, any resulting resource savings in terms of reduced need for future health and personal social care as well as the benefits to the patients, their families or society as a whole.

- The most common form of economic evaluation is a cost-effectiveness analysis. Cost-effectiveness analyses report the financial costs associated with an intervention and a single primary, often clinical, outcome measure. Based on trial design principles an intervention is often compared to existing practices; the cost-effectiveness analyses provide the additional financial costs to achieve an additional unit of the primary outcome measure of the trial. If researchers believe decision makers are interested in the most efficient way of achieving a particular goal or how much extra of the primary outcome measure would result from additional expenditure, they would include this type analysis.

- More information can be provided by a cost-utility analysis where the outcomes of an intervention are described in generic health related quality of life terms, typically Quality Adjusted Life Years. These analyses allow decision makers to make comparisons between interventions that have completely different outcomes. They also typically report in incremental terms; the additional cost for an additional Quality Adjusted Life Year (QALY).

Class activity

1. The facilitator should provide an example of a specialist health economics evaluation on a health economics issue.
2. The class should analyse and interpret it in order to justify an informed decision.

1.4 Consumer rights and medical scheme responsibilities

In every country health economics plays, or should play, an important role in policy and operational decisions. It is important to note that consumer rights should be respected at all times. These rights include;

Health service rights, which include:

- rights regarding the health care services which a user is entitled to access;
- rights necessary for accessing health care services; and
- rights regarding the way users are to be treated when accessing their health rights.

Health system rights, which include:

- the right of access to information;
- the right to just administrative action; and
- the right to participate in decisions about the health care system.

Medical scheme responsibilities

The definition of the business of a medical scheme is found in the Medical Scheme Act and reads as follows:

“Business of a medical scheme” means the business of undertaking liability in return for a premium or contribution:

- To make provision for the obtaining of any relevant health service
- To grant assistance in defraying expenditure incurred in connection with the rendering of any health service;
- Where applicable, to render a relevant health service, either by the medical scheme itself, or by any supplier or group of suppliers of a relevant health service or by any person, in association with or in terms of an agreement with a medical scheme

Scarce resources should be used wisely to meet the needs of consumers. In addition, consumers’ rights to medical care should be respected.

Probably the most commonly known form of health economics is that of a medical aid. An individual not only customize their healthcare benefits to suit them, but also lightens the burden on public healthcare by providing means for themselves. Medical aid schemes can be customised to suit the exact needs with regards to medical condition and available financial resources.

In deciding on what schemes to consider, health economics reports should be analyzed. These reports may have their origins from various sources. It is important to gain information from an objective source. Having information from an objective source, however, is not enough. The evidence must be valid and reliable, i.e., the information on the products must remain the same as its element remains the same, and the information must be about aspects of the product that can be used.
In some ways the challenges involved in personal health risk management are the same as those presented for death and disability. However, here there is another aspect to be considered - the management of health conditions to maintain a financially feasible/optimum plan. This includes seeking out the optimum approach to funding healthcare costs - the most suitable combination of medical aids, health insurance, etc. Increasingly this is being combined with health cost curtailment programs such as managed health care schemes.

1.5 Basic health economic theory

In every community the need for health care is always there but not all translate into demand for health care. Price increase in health care does not lead to a proportionate decrease in demand (unlike some other goods) because of desire of people to be in good health. Demand following price increase in a particular facility may result in individuals trying some other places for alternative health care. To have development countries must have citizens that are productive and to be productive one need to be in good health. It is therefore imperative that health brings about development. This can be achieved through efficient allocation of resources to the various segments and levels in health care delivery.

Module 2

The principles of health economics to enable informed decision making

This Module deals with:

- Tools, programmes and methods used to apply health economics with reference to the value and appropriateness of each in selected situations.
- Data used in specialized health economics reports evaluated for authenticity, reliability and relevance in a specific situation.

2.1 Tools, programmes and methods used to apply health economics

Tools, programmes, methods and models used to apply health economics include cost effectiveness, cost benefit and cost minimisation. Health economists use these general methods:

- **Cost analysis** of intervention/program, side effects, and illness. Economists explore the costs of cancers, hospital-acquired infections, communicable diseases, and even an outbreak investigation for local health departments.
- **Economic evaluation** for comparing two or more interventions/programs in terms of costs or benefits; evaluations include cost-effectiveness, cost-benefit, and cost-utility analyses. For example, economists may perform evaluations on screening options for diabetes, diagnostic options for HIV and TB, vaccine strategies, and injury prevention programs.
- **Decision and transmission modeling** includes developing and testing regression models, Markov decision-choice models, agent-based models, simulations, and theoretical mathematical models. For example, economists can perform modeling on vaccine strategies, HIV diagnosis and treatment, and state public health resource-allocation options.
- **Regulatory analysis** for anticipating and evaluating the impact of regulations on costs and/or behaviours. Economists' work in this area includes analysing the effect of required pre-travel medical consultation for international travellers.

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Preventative Care

There is a growing awareness of the need to focus on the preventative side of medical care. On the one hand this involves truly precautionary steps such as diet, exercise and general lifestyle, whilst on the other hand it also involves early diagnosis of conditions with suitable medical intervention.

2.2 Evaluation of data used in specialized health economics reports

Data used in specialised health economics reports should be evaluated for authenticity, reliability and relevance. Data may include:

- information relating to burden of disease statistics
- demographics
- new drugs, and
- new technology

Data should be:

- **Authentic**: authenticity is assurance that information in the report is from the source it claims to be from. Authenticity involves proof of identity. Data should be from authentic sources.

- **Reliable:** reliability is the extent to which we can rely on the source of the data and, therefore, the data itself. Reliable data is dependable, trustworthy, unfailing, sure, authentic, genuine, reputable. Consistency is the main

measure of reliability. So, in simple terms, the reputation of the source is critical.

- **Relevant**: relevant data id data which is applicable to the situation or problem at hand that can help solve a problem or contribute to a solution.

Module 3

The impact of the regulatory environment on health economics

This Module deals with:

- The relevant regulatory environment in terms of how it impacts positively or negatively on heath economics.
- The powers of statutory bodies operating in the health environment with reference to their positive and negative impact on the industry.

The regulatory environment plays an important role in health economics. Most probably the most significant of the factors is that of the right of pharmaceutical companies to produce medicine exclusively for a certain period of time, before others are allowed to produce generic versions of the same drug. This is because a lot of time and money goes into research and development and companies need to make profit. For the duration of their license to exclusivity, these companies will price their medicine in accordance with basic economic principles of supply and demand. This means that the price will rise as the demand for it increases. This significantly impacts on resource allocation in medical fund schemes etc.

3.1 Statutory Bodies

Most of the regulations surrounding health economics in South Africa revolve on the Medical Schemes Act of 1998, which was implemented by the Minister of Health, after consultation with the Council for Medical Schemes. It is the vision of this Council to regulate fairly and effectively in order to protect the interests of members and to promote equity in access to medical schemes.

The Research and Monitoring Division of the Council comprises a highly specialized team of multidisciplinary professionals. Together, the members of the team combine expertise in medical and nursing care, law, epidemiology, public health, accounting, health economics, information management and business administration. The team is responsible for monitoring the impact of the Act, researching developments and recommending policy options to the Department and Ministry of Health, to improve the regulatory environment.

3.2 The Medical Schemes Act

The following are excerpts from the Medical Schemes Act:

Registration of medical scheme

2. (1) Every application for registration of a medical scheme must be in writing and signed by the person applying for the registration of the medical scheme and must contain —

(a) the full name under which the proposed medical scheme is to be registered;

(b) the date on which the proposed medical scheme is to come into operation;

(c) the physical and postal addresses of the registered office of the proposed medical scheme;

(d) two copies of the rules of the proposed medical scheme, which must comply with regulation 4(1), and must be duly certified by the applicant as being true copies of the rules which will come into operation on the date of registration of the proposed medical scheme or the date of commencement of the medical scheme, whichever date is applicable;

(e) the full names, physical and postal addresses and *curriculum vitae* of the principal officer and trustees of the proposed medical scheme;

(f) in the case of a restricted membership medical scheme, the name or names of the participating employer(s);

(g) the name and address of the person who will administer the medical scheme;

(h) a copy of the administration agreement, in the case where the proposed medical scheme is to be administered by an administrator;

(i) a copy of any other joint-administration agreement between a medical scheme and any other party;

(j) the guarantees and the guarantee deposit vouchers as the Registrar may require;

(k) a detailed statement of services to be undertaken, directly or indirectly, on behalf of the proposed medical scheme by an administrator, broker and managed care organisation;

(l) a detailed business plan; and

(m) such other information as the Registrar may require.

Prescribed Minimum Benefits

8. (1) From the date of commencement of these regulations, the prescribed minimum benefits that medical schemes must offer in terms of the Act consist of the provision of treatment for all the categories of Diagnosis and Treatment Pairs listed in Annexure A subject to any limitations specified in Annexure A.

(2) Any benefit option that is offered by a medical scheme must reimburse in full, without co-payment or the use of deductibles, the diagnostic, treatment and care costs of the prescribed minimum benefit conditions specified in Annexure A in at least one provider or provider network which must at all times include the public hospital system.

(3) Cover in the public hospital system must include all the costs of diagnosis, treatment and care for the prescribed minimum benefit Diagnosis-Treatment Pairs in Annexure A to a level and entitlement that is not different in terms of quality and intensity to the services provided to publicly funded patients.

(4) Medical schemes may offer enhanced options to their members through additional cover for any specific entitlements: Provided that diagnosis, treatment and care under the prescribed minimum benefits is provided.

(5) The options referred to in sub regulation (4) may include the use of alternative providers or provider networks and could incorporate member co-payments, or enhanced options for other benefits that fall outside of the prescribed minimum benefits or both.

(6) If cover for a prescribed minimum benefit as defined in Annexure A under an enhanced option is exhausted while the patient still requires diagnosis, care or treatment for that prescribed minimum benefit , that patient may be transferred to a lower cost provider or provider network, but the medical scheme must continue to be fully liable

for all costs incurred in delivering the prescribed minimum benefit care that is required.

(7) A member or dependant shall not lose his or her entitlement to any prescribed minimum benefit, regardless of any enhanced option they may choose or as a result of any condition associated with that enhanced option.

(8) Medical schemes may employ appropriate interventions aimed at improving the efficiency and effectiveness of health care provision provided that every option offered by a medical scheme must at least provide full cover for prescribed minimum benefits in at least the public hospital system.

(9) These regulations must not be construed to prevent medical schemes from employing techniques such as the designation of preferred providers, requirements for Pre-Authorization and the application of Treatment Protocols: Provided that in the case of Pre-Authorization a medical scheme must not refuse authorization for the delivery in a public hospital of standard treatment for a prescribed minimum benefit as defined in Annexure A.

(10) Every Medical Scheme must make provision in its rules for the reimbursement of the cost of care that is considered to fall within the Prescribed Minimum Benefits prescribed under these Regulations within all the membership options that the medical scheme offers.

(11) Medical schemes must refer to these Regulations in their rules and such reference may not be a full reproduction of these Regulations.

(12) Medical schemes must specify in their rules whether they restrict the provision of the prescribed minimum benefits under specific membership options to a named network of providers.

(13) The Registrar must determine whether a medical scheme's rules are consistent with the provisions of the Act and these Regulations before approving such rules.

(14) Disputes and complaints between a member or a provider and the medical scheme in relation to minimum prescribed benefits must be dealt with in terms of Chapter 10 of the Act.

Limits on benefits

9. A medical scheme may, in respect of the financial year in which a member joins the scheme, reduce the annual benefits with the exception of the prescribed minimum benefits, *pro-rata* to the period of membership in the financial year concerned calculated from the date of admission to the end of the financial year concerned.

Conditions to be complied with by brokers

28. (1) A medical scheme must not compensate any person in terms of section 65 for acting as a broker unless such person —

(a) has been accredited by the Council to act as a broker or apprentice broker;
(b) has been issued with a certificate by the Council;
(c) is a fit and proper person for purposes of acting as broker or apprentice broker;
(d) enters into a prior written agreement with the medical scheme concerned, and the nature and compensation payable to such person must be fully disclosed in the financial statements of the medical scheme concerned;
(e) discloses to the prospective member the name of the medical scheme concerned and the fact that he or she is acting in terms of an agreement;
(f) discloses to the prospective member the registered contributions for the cover;
(g) discloses to the prospective member the nature of the services rendered by the broker;
(h) provides best advice and acts at all times in good faith towards the member, the prospective member and the medical scheme concerned;
(i) provides documentary proof to the member or prospective member that he or she has obtained accreditation from the Council;
(j) discloses to the member or prospective member the compensation payable to the broker, which shall not be in excess of the maximum amount as determined in terms of sub regulation (2);
(k) complies with the minimum level of services provided for in the accreditation requirements;
(l) complies with the recognised educational qualifications contemplated in sub regulation (8);
(m) complies with the code of ethics for appropriate behaviour provided for in the accreditation requirements; and
(n) undertakes not to receive any other incentive, reward or compensation from any other source in addition to the disclosed compensation as contemplated

in subparagraph (d).

(2) A maximum amount payable in a given year in respect of the performance of services relating to the introduction of a member to a medical scheme by any number of brokers shall not exceed 3% plus value added tax (VAT) of the contributions payable in respect of members introduced by such broker during that year.

(3) Sub regulation (2) must not be construed to restrict a medical scheme from applying a sliding fee scale based on the size of the group being introduced provided that the maximum amount in respect of a member introduced as specified in sub regulation (2) is not exceeded.

(Incorporating amendments published in Government Notice R.570 Gazette Nr 21256 dated 5 June 2000)

(4) No compensation is payable unless such compensation has been indicated in the rules of the medical scheme concerned.

(5) A medical scheme must not prevent a person form applying for membership of a medical scheme for the reason that that person is not using a broker to apply for such membership.

(Incorporating amendments published in Government Notice R.570 Gazette Nr 21256 dated 5 June 2000)

(6) A person is disqualified from performing broker services if he or she is an unrehabilitated insolvent or has previously received a disqualifying rating as a broker or apprentice.

(7) Any person desiring to be accredited as a broker must apply in writing to the Council and the application must be accompanied by documentary proof of a recognized educational qualification and appropriate experience.

(Incorporating amendments published in Government Notice R.570 Gazette Nr 21256 dated 5 June 2000)

(8) A recognised educational qualification and appropriate experience, for the

purposes of this regulation, means —

- ❒ Grade 12 education; and
- ❒ a minimum of two years demonstrated experience as broker or apprentice broker in health care business;

3.3 The National Health Act

The purpose of the act is to unite the various elements of the national health system in a common goal to actively promote and improve the national health system in South Africa. It also provides the opportunity for a system of cooperative governance and management of health services, within national guidelines, norms and standards, in which each province, municipality and health district must address questions of health policy and delivery of quality health care services.

The act establishes a health system based on decentralised management, principles of equity, efficiency, sound governance, internationally recognised standards of research and a spirit of enquiry and advocacy which encourages participation. It promotes a spirit of co-operation and shared responsibility among public and private health professionals and providers and other relevant sectors within the context of national, provincial and district health plans.

Module 4

The role of Pharmaco-economics in funding decisions

This Module deals with:

- Pharmaco-economics as a branch of health economics.
- Tools, programmes, methods and models used in pharmaco-economics with reference to the value and appropriateness of each in selected situations.
- A selected model for a formulary or protocol to determine whether the principles of pharmaco-economics have been applied effectively.

4.1 Pharmaco-Economics

Pharmaco-economics has been defined as “the description and analysis of costs of drug therapy to healthcare systems and society” (Bootman, *et al*. 1996:8). Pharmaco-economics is a field within the broader health economics field that focuses mainly on the costs and benefits of pharmaceuticals.

- Pharmaco-economics identifies, measures, and compares the costs and consequences of drug therapy to healthcare systems and society.

- The perspective of a pharmaco-economic evaluation is paramount because the study results will be highly dependent on the perspective selected.

- Healthcare costs can be categorised as direct medical, direct nonmedical, indirect nonmedical, intangible, opportunity, and incremental costs.

- Economic, humanistic, and clinical outcomes should be considered and valued using pharmaco-economic methods, to inform local decision making whenever possible.

- To compare various healthcare choices, economic valuation methods are used, including cost-minimization, cost-benefit, cost-effectiveness, and cost-utility analyses. These methods all provide the means to compare competing treatment

options and are similar in the way they measure costs. They differ, however, in their measurement of outcomes and expression of results.

- In today's healthcare settings, pharmaco-economic methods can be applied for effective formulary management, individual patient treatment, medication policy determination, and resource allocation.

4.2 Tools, programmes, methods and models used in pharmaco-economics

The pharmaco-economic methods or tools can be separated into two distinct categories:

- economic, that is, Cost consequence, Cost benefit, Cost effectiveness, Cost minimisation, Cost utility
- humanistic that is, Quality of life, Patient preferences, Patient satisfaction evaluation techniques

These methods have been used in variety of fields and are being applied increasing to health care.

Cost of illness evaluation

A cost of illness (COI) evaluation identifies and estimates the overall cost of particular disease for a defined population. This evaluation method is often referred to as "burden of illness" as involves measuring the direct and indirect costs attributable to a specific disease. The costs of various diseases, including peptic ulcer disease, mental disorders, and cancer, in South Africa have been estimated. COI evaluation is not used to compare competing treatment alternatives but to provide an estimation of the financial burden of a disease. Thus the value of prevention and treatment strategies can be measured against this illness cost.

Cost minimisation analysis

Cost minimization analysis (CMA) involves the determination of the least costly alternative when comparing two or more treatment alternatives. With CMA, the alternatives must have an assumed or demonstrated equivalency in safety and efficacy (i.e., the two alternatives must be therapeutically equivalent). Once this

equivalency in outcome is confirmed, the costs can be identified, measured, and compared in monetary units (Rands).CMA is a relatively straightforward and simple method for comparing competing programs or treatment alternatives as long as the therapeutic equivalence of the alternatives being compared has been established

Cost benefit analysis

Cost benefit analysis (CBA) is a method that allows for the identification, measurement, and comparison of the benefits and costs of a program or treatment alternative.

The benefits realised from a program or treatment alternative are compared with the converted into equivalent Rands in the year in which they will occur. Future costs and benefits are discounted or reduced to their current value. These costs and benefits are expressed as a ratio (benefit to cost ratio), a net benefit or net cost. A clinical decision maker would choose the program or treatment alternative with the highest net benefit or the greatest benefit to cost (B/C) ratio. Guidelines for the interpretation of this ratio are indicated

- If B/C ratio> 1, the program or treatment is of value. The benefits realized by the program or treatment alternative outweigh the cost providing it.
- If B/C ratio = 1, the benefits equal the cost. The benefits realised by the program or treatment alternative are equivalent to the cost of providing it.
- If B/C ratio <1, the program or treatment is not economically beneficial. The cost of providing the program or treatment alternative outweighs the benefits realized by it.

CBA should be employed when pampering treatment alternatives in which the costs and benefits do not occur simultaneously. CBA also may be used when comparing programs with different objectives, because all benefits are converted into Rands. CBA also can be used to evaluate a single program or compare multiple programs. However, valuing health benefits in monetary terms can be difficult and controversial.

Cost effectiveness analysis

CEA involves comparing programs or treatment alternatives with different safety and efficacy profiles. A cost is measured in Rands, and outcomes are measured in terms

of obtaining a specific therapeutic outcome. These outcomes are often expressed in physical units, natural units, or non-rand units (lives saved, cases cured, life expectancy, or mm Hg drop in blood pressure).

The result of CEA area also expressed as a ratio-either as an average cost-effectiveness ratio (ACER) or as an incremental cost-effectiveness ratio (ICER).

Cost-utility analysis and quality-adjusted life year

Cost-utility analysis (CUA) is another method for comparing treatment alternatives. CUA integrates patient preferences and health related quality of life (QOL). Cost is measured in Rands, and therapeutic outcome is measured in patient-weighted utilities rather than in physical units. Often the utility measure used is a quality-adjusted life year (QALY) gained.

QALY is a common measure of health status used in CUA, combing morbidity and mortality data. Results of CUA are also expressed in a ratio, a cost – utility ratio (C/U ratio). Most often, this ratio is translated as the cost per QALY gained. The preferred treatment alternative is that with the lowest cost per QALY (or other health status utility).

CUA is the most appropriate method to use when comparing programs and treatment alternatives that are life extending with serious side effects (e.g., cancer chemotherapy, those which produce reduction in morbidity rather than morality (e.g., medical treatment of arthritis),and QOL is the most important health outcome being examined.

4.3 Applications of Pharmaco-Economics (PE)

According to Sanchez LA, applied PE means, Putting PE principles, methods and theories into practice, to quantify the “value” of pharmacy products and pharmaceutical care services utilized in “real world” environments”

PE is primarily used to inform decision making at a number of different levels. From a pharmacy perspective, these decisions can be split into two basic areas:

a) Drug therapy evaluations

b) Clinical pharmacy service evaluation

One of the primary applications of pharmaco-economics in clinical practice today is to aid clinical and policy decision making. Pharmaco-economic data can be powerful tool to support various clinical decisions, ranging from the level of the patient to the level of an entire health care system.

The literature reflects a shift over the years from mostly applying PE for drug therapy evaluations to using it for the justification of pharmacy services. The diagram below lists some of the specific types of decisions where PE has been successfully applied. There are numerous examples of each of these in the literature today.

Potential hurdles for application of PE to drug decision-making-

- Lack of “PE sophistication” by target audience (e g. hospital administrators, pharmacy directors).
- Lack of “PE sophistication” by pharmacy practitioners who are generating and/or interpreting PE data.
- Lack of organisational resources (time and money).
- Component vs. system management approach
- Budget responsibilities

Class activity

The facilitator and the class should select and analyse a model for a formulary or protocol to determine whether the principles of pharmaco-economics have been applied effectively.

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