

Block

2

MARKETING AND HEALTH ECONOMICS

UNIT 17

Marketing of Healthcare Services

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Pricing of Services

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Health Economics

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BLOCK INTRODUCTION

In previous block you learnt about the Financial management in which we the concept and application of accounting and the various types of cost incurred in hospital. Carrying the topic forward in this unit we will be discussing about the 'Marketing and Health economics'.

For the convenience of understanding, the Block have been classified into three units which are:

Unit 17: Marketing of healthcare services

Unit18: Pricing of Services

Unit 19: Health economics

In the first unit which is Marketing of healthcare services, we will discuss about the meaning and scope of marketing in health area. We will learn about the concept of service quality and its application for health care services marketers, also the unique characteristics of services and their marketing implications will be deliberated in the unit. Followed by chapter on Pricing Services in which the basic foundations of the pricing will be discussed. You will also learn about relation between costs and pricing, prices of hospital services and customer knowledge and implementing the pricing policy. In the end we will discuss something about health economics, definition and application of health economics in health and hospital planning.

In every unit there is check your progress for your own self-assessment. See that you attempt those after every section you read.

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UNIT 17 MARKETING OF HEALTH CARE SERVICES

Structure

- 17.0 Objective
- 17.1 Introduction
- 17.2 Marketing: Meaning and scope
- 17.3 Distinctive Nature of Services Marketing
- 17.4 The Services Marketing Mix
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17.0 OBJECTIVES

After studying this unit, you should be able to:

- explain the term marketing and its scope;
- discuss the unique characteristics of services and their marketing implication;
- explain the concept of service quality and its application for health care services marketers;
- comprehend the role of marketing communication for health care services; and
- discuss the concept of social marketing and its application in the health care.

17.1 INTRODUCTION

You might have some idea of what marketing is since as a consumer of different products you are definitely exposed to marketing in one way or another: So, what does the term ‘marketing’ mean to you? Is it selling or is it advertising? In fact, marketing is much more than just selling and advertising and covers a wide range of critical business activities that bring the products to the customers; the products they want, at the time they want them, at place they want them, at prices they can afford and also providing all the information the customers need to make informed and satisfying choices. You must be thinking “why should I study marketing?” or “what does study of marketing offer to me?” Well, as you would have noticed above, marketing includes activities which are vital to any organisation, including health care organisations. Most of you may not be working in the marketing department, but you must be in direct touch with the consumers

Marketing and Health Economics (patients) at some point of time and thereby have an impact on the way the consumers judge the quality of services being received. This way you act as part time marketers. Therefore, regardless of specialisation or different responsibility areas a basic understanding of marketing is important for all of you. Even an HRD manager would be required to do some sort of marketing to attract best talent to the organisation.

In this unit we will first have a basic understanding of the ‘marketing’ function and its scope. Since services are different from goods, we will look into distinct characteristics of services which differentiate them from goods and their resulting marketing implications. The concept of service quality with specific reference to health services will be discussed now. This is one area which is receiving widespread attention of academicians as well as practitioners worldwide. Word of mouth communication is very important for health care services and thus we will also take up some issues related to it.

17.2 MARKETING: MEANING AND SCOPE

There is no single universally accepted definition of marketing. We are giving below a few widely accepted definitions of marketing which highlight the essence of the broad subject.

Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and or organisational goals. (American Marketing Association)

Marketing is the management process responsible for identifying, anticipating and satisfying customer’s requirement profitably. (U.K. Chartered Institute of Marketing)

Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating offerings and exchanging products of value with others. (Philip Kotler)

Some of the common points emerging out of these definitions of marketing are:

- Marketing is a management process.
- Marketing is about giving customers what they want and includes identifying and anticipating customer requirements
- Marketing offers and exchanges ideas, goods and services.
- Marketing involves pricing, promotion and distribution of ideas, goods and services

Marketing activities include environmental scanning (demographic, technological, political, legal as well as socio-cultural environment), competitive analysis, finding customer needs and wants, and also deciding exactly which wants and whose wants the organisation is going to satisfy (segmentation and target market strategy), developing a marketing mix (the four P’s—product, price, place and promotion) to satisfy the needs and wants of the selected target market, periodically evaluating the marketing efforts so as to bring about effective changes, if required. We will now take up some of these activities in details.

The Marketing Mix

Marketing is performed within a certain environment which itself is always changing. The marketing activities have, therefore, to change in consonance with environment to be continuously effective. In order to appreciate this process, it is easier to divide the marketing activities into four basic elements which are together referred to as the marketing mix. The four basic elements are:

- Product
- Price
- Promotion
- Place

As all these four starts with letter 'P' they are, at times, referred to as the four Ps of the marketing mix or the 4Ps in marketing.

The word product stands for goods or services offered by the organisation. Once the needs are identified, it is necessary to plan the product and after that keep on analysing whether the product still satisfies the needs which were originally planned for, and if not, to determine the necessary changes.

Price refers to the money value that the customer has to pay. The product has to be adequately priced. This involves considerations to the profit margin, the cost, the accessibility of sales at different prices and the amount of the right price. Decision for services require separate treatment than-pricing for goods. We will take up the issue in details in the next unit.

Promotion is the aspect of selling and advertising, or communicating the benefits of the product or service, to the target customers or the market segment involved in order to persuade them to purchase such products or services.

It includes selling through advertising as well as the sales force. Besides, a certain amount of promotion is done through special seasonal discounts, competitions, special price reductions, etc., collectively called sales promotion.

Finally, place or distribution refers to the aspect of the channels of distribution through which the product has to move before it reaches the consumer. It also includes the logistics aspects of distribution such as warehousing, transportation, etc., needed for geographical distribution of the products.

It is also concerned with the selection of distribution channels. The organisation must decide whether it should sell through wholesaler (who buy in large quantities and sell to retailers) and then to retailers (i.e., the shopkeepers, who ultimately sell to the consumers), or whether directly to the consumers. There are many ways in which a product can be moved from the producer to the customer. The optimum method has to be determined in terms of both consumer satisfaction and profitability to the organisation, or optimum use of the organisation's resources.

Market Segmentation

Market segmentation refers to the process of dividing a market into meaningful relatively similar and identifiable segments or groups. This helps

Marketing and Health Economics in a better understanding of needs and wants of the customers and thereby fulfilling them in an effective way. Now-a-days market segmentation plays a key role in marketing strategy of almost all successful organisations. The ideal segmentation strategy maximizes differences between segments and minimizes differences within each segment, in terms of criteria of interest. The most common segmentation techniques use demographic, geographic, psychographic, behavioural/utilization and benefit criteria. According to Engelberg and Neubrand (1997), “segmentation techniques are integral to an organisation’s entire marketing process, from initial marketing research through marketing communication. Segmentation-is a powerful way for marketers to understand who they are trying to reach, what is unique about each group, and how to design, distribute price, and promote offerings accordingly. It helps marketers make wise, cost effective choices. Health care marketers should understand and perform segmentation techniques particularly when financial resources are limited, competition is increasing and a health care organisation’s clear direction is essential to ensure its profitability”.

Check your progress-1

- a) What is Marketing Mix?
- b) What is Market Segmentation?

17.3 DISTINCTIVE NATURE OF SERVICES MARKETING

The term service is rather general in concept and it includes a wide variety of services. They are widely used by people in practically all aspects of life. From education to entertainment, finance to fast food, market research to medical services, travel to telephone, advertising to amusement parks, retailing to recreation and so on, services now-a-days are increasingly being used by corporate as well as household sector. Before we discuss the distinctive nature of services let us first look at a couple of definitions of a ‘service’. Kotler and Bloom defined service as “*any activity or benefit that one party can offer to another that is essentially intangible and doesn’t result in the ownership of anything. Its production may or may not be tied to a physical product*”.

According to Gronroos “*A service is an activity or series of activities of more or less intangible nature that normally, not necessarily, take place in interaction between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solution to customer problems*”.

Characteristic of services

The above definitions highlight some of the special characteristics of services which are different from physical goods. For majority of services, four basic characteristics can be identified:

- i. Intangibility
- ii. Heterogeneity
- iii. Inseparability of production and consumption

iv. Perishability

i) Intangibility

The most basic difference between goods and services cited universally is intangibility. Since services are performances and not objects, they cannot be seen, felt, tasted or touched in the same manner as we can do with physical goods. - Consider for example a dental check-up, this cannot be actually seen or touched and can actually be experienced only. This is in contrast with, say, an automobile — a physical good — which can be seen, touched and physically checked. Intangibility of services is considered to -be the critical distinction between goods and services. However, it must be noted that it is difficult to find a pure good or a pure service. Practically all physical goods have some element of service built into them and similarly all services have some tangible components. It is basically the relative dominance of intangibility in services as compared to dominance of tangibility in goods as shown in Fig. 17.1.

The intangibility of services poses a number of marketing challenges:

- Services can't be stored and, therefore, it may become difficult to manage fluctuations in demand. For example, while demand for air coolers is more in summers, still it is possible to manufacture them in winter and keep them in store for selling later in summers. However, demand for health care services which again is more in summers/ monsoons can't be managed that way.

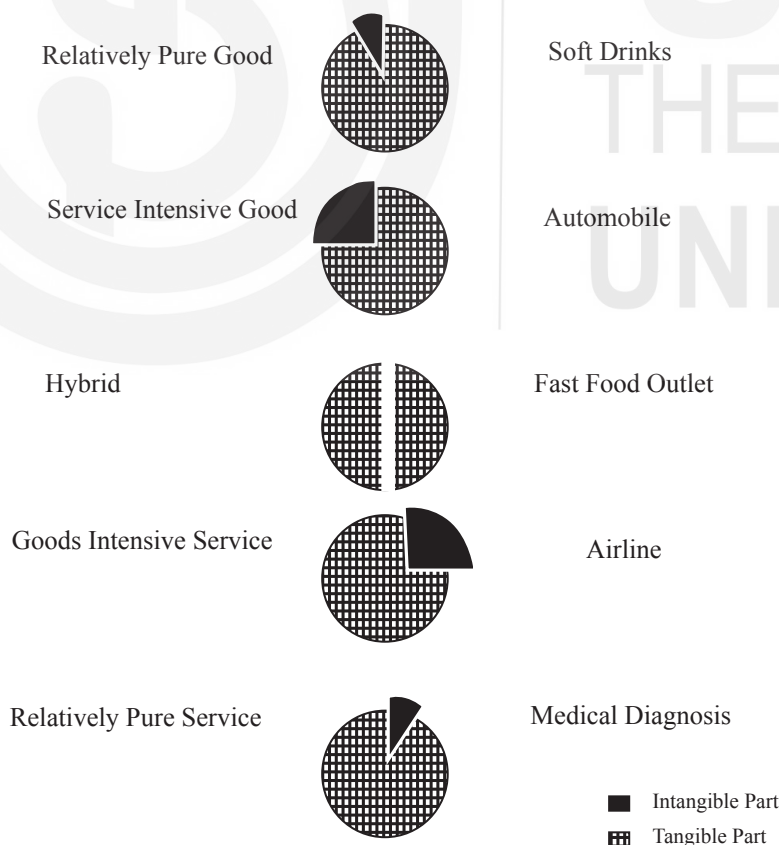


Figure 17.1: Relative Tangibility Spectrum

Marketing and Health Economics

- Since services can't be touched, felt, tasted or smelt, they can't be readily displayed or communicated to customers. Therefore, it becomes difficult for customers to evaluate a service prior to purchase. This makes the process of judgement of quality by consumer difficult, which in turn make the advertising and promotion strategies difficult to frame for the service provider.
- Prices are comparatively difficult to set for services because of its intangible nature. The actual costs of a unit of services are hard to find out and the relationship between price and quality is complex.

ii) Heterogeneity

Since services are performances produced mostly by humans, there is a strong possibility for high variation in these performances. The service delivered may vary from day to day, from producer to producer and from customer to customer. For example, a doctor may talk differently to different customers on a given day or differently to the same customer on separate days. Essentially, since number of factors affect human performances and that no two customers are the same gives rise to the heterogeneity factor.

Since the service delivered. may vary front customer to customer, provider to provider and day-to-day, it becomes difficult to ensure consistent service quality. Further, the quality of services provided depends on many factors which cannot be fully controlled by the supplier, like the level of demand, ability of consumer to tell his requirements etc. Because of these factors service providers can't be sure that the services being delivered will match with what was planned and promoted. In a nutshell, heterogeneity makes standardization and quality control difficult to achieve.

iii) Inseparability of Production and Consumption

In case of services the production and consumption process overlap. While goods are first produced, then sold and consumed, most of the services are sold first and then produced and consumed simultaneously. The interaction between production and consumption may be broad or quickly passing. It may involve interaction between customer and service employee, or between customer and machine. The interaction is considered to be the essence of services marketing since generally it is during the interaction that customer makes a judgement on the level of service being received by him e.g. interaction between patient and doctor or patient and nursing staff.

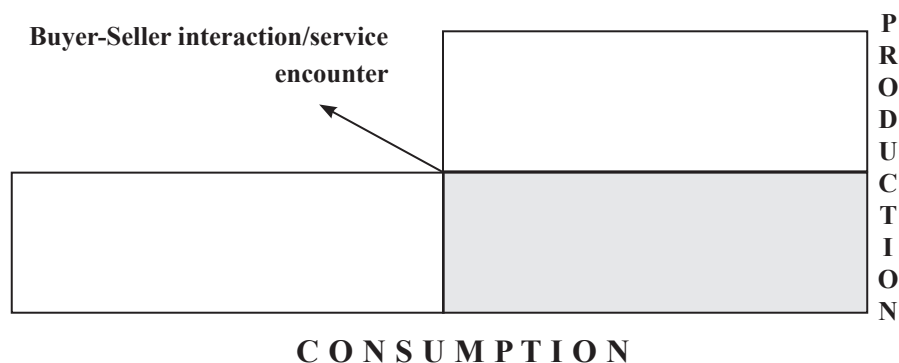


Fig 17.2: Inseparability of Production and Consumption Services

Because Service are generally produced and consumed at the same time, it is no possible to have mass production. So, it is not possible to have significant economies of scale. Because of simultaneous production and consumption, the customer is generally present in the ‘service factory’ and is involved in the production process. This may affect the outcome of the service process or transaction. Further a customer is not alone while receiving the service. This presence of other customers could have an impact on the type of service perceived to be received by a customer Benov (1996) highlights the importance of this characteristic for health care managers, “They should define their services, not in broad, sweeping images of high-tech medicine and glossy newsletters, but in terms of dozens — perhaps, hundreds of specific encounters or events (e.g. admission, food quality, telephone enquiries, staff responsiveness, discharge etc.). Employees shape these moments of truth not only by the tasks they perform, but also by the way they look, act, talk and interact with the customers with other customers, and with fellow workers. Employee behaviour must, therefore, be carefully orchestrated and managed”.

iv) Perishability

Perishability means that services cannot be stored, resold or returned. A Hospital bed not occupied on a particular day cannot be used or resold at a later time. That Opportunity is gone forever. This is in contrast to goods which can be stored or even returned.

The perishability of services poses a number of challenges:

- The major implication of this aspect is that services can’t be stored. Therefore, aspects like demand forecasting, capacity utilization planning become important and difficult decision areas.
- Since services can’t be returned or resold there is a greater need to have strong recovery strategies if the service goes wrong.

Table 17.1 gives a summary of the above-mentioned marketing problems.

Table 17.1: Unique Service Features and Resulting Marketing Problems

Unique service features	Resulting marketing problems
Intangibility	<ul style="list-style-type: none"> • Services cannot be stored • Cannot protect services through patents • Cannot readily display or communicate services • Prices are difficult to set
Inseparability	<ul style="list-style-type: none"> • Consumer involved in production process • Other consumer involved in production • Centralized mass production of services difficult
Heterogeneity	<ul style="list-style-type: none"> • Standardization and quality control difficult to achieve
Perishability	<ul style="list-style-type: none"> • Services cannot be stored

Source: Zeitliaml, Parasuranian and Berry, “Problems and Strategies in Services Marketing *Journal of Marketing*, Spring 85, p. 35

Marketing and Health Economics A number of strategies to overcome these problems resulting from unique service characteristics have been developed and suggested over a period of time by a number of researchers. Table 1.2 gives a summary of these strategies.

Table 17.2: Marketing Strategies

Unique Services Features	Marketing Strategies
Intangibility	<ol style="list-style-type: none"> i. Increase service tangibility ii. Stress tangible cues iii. Simulate or stimulate word-of-mouth communication iv. Create strong organisational image v. Promote brand names vi. Use cost accounting to set prices vii. Engage in post purchase communications viii. Manipulate the atmospherics
Inseparability	<ol style="list-style-type: none"> i. Emphasise selection and training of public contact personnel ii. Learning to work with larger groups iii. Manage customers iv. Train additional service providers v. Use multi-site locations
Heterogeneity	<ol style="list-style-type: none"> i. Proper person selection and training ii. Have systems for monitoring customer satisfaction iii. Industrialize service through use of technology iv. Customize service
Perishability	<ol style="list-style-type: none"> i. Use strategies to cope with fluctuating demand like: <ul style="list-style-type: none"> • Differential pricing • Reservations systems • Consumer participation • Part time employees etc. ii. Make simultaneous adjustments in demand and capacity to achieve a closer match between two

Source: Zeithaml, Parasuraman and Berry, "Problems and Strategies in Services Marketing", Journal of Marketing, Spring 1985, p.37.

Check your progress-2

- a) Enlist characteristics of services?
- b) Enlist marketing strategies?

17.4 THE SERVICES MARKETING MIX

The unique characteristic of services make the traditional 4P marketing mix (discussed earlier in, this unit) seem inadequate. Careful management of these 4Ps Product, Price, Place and Promotion though essential, is not sufficient for successful marketing of services. Further, the strategies for the four Ps require some modifications while applying to services.

Since services are produced and consumed simultaneously, the contact personnel or the service delivery personnel become extremely important. It is during these encounters of service providers and customers i.e. the process on which a lot depends with regards to the final outcome as well as the overall perception of the service by the customer. The actual physical surroundings during these encounters have also a substantial bearing on the service delivery. All these facts lead to the development of an expanded marketing mix with three new P's added to the traditional Mix. These are:

<ul style="list-style-type: none"> • People 	All human actors who play a part in service delivery and thus influence the buyer's perceptions; namely, the firm's personnel, the customer, and other customers in the service environment.
<ul style="list-style-type: none"> • Physical evidence 	The environment in which the service is delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of the service.
<ul style="list-style-type: none"> • Process 	The actual procedures, mechanisms and flow of activities by which the service is delivered – the service delivery and operating system.



Fig.17.3 : Marketing Mix for Services

17.5 SERVICE QUALITY

Quality came to the service literature only at the beginning of 1980's, which is quite in contrast to manufacturing sector wherein quality management has a long and rich history. However, in 1990's quality has become an essential part of service marketing. The term 'Service Quality' has been defined in different ways by researchers, some of which are given below:

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- Quality of a service, as perceived-by the customer is the result of a comparison between the expectation of the customer and his real-life experiences. (Gronroos, 1982)
- Service quality as perceived by customers, can be defined as the extent of discrepancy between customers', expectations or desires and their perceptions. (Zeithaml, Parasuraman, Berry, 1990)
- Service quality is the delivery of excellent or superior service relative to customer expectations. (Zeithaml and Bitner, 1996)

As you will notice, all these limitations revolve around the fact that service quality is essentially what customer perceive. Only customers judge quality and all other judgements are irrelevant. however, 'Service Quality' as contrasted to goods quality requires a different approach because of some basic differences between goods and services with regards to how they are produced, consumed and evaluated.

- As you have studied earlier in this unit, services are predominantly intangible in nature. Since services are performances, acts and experiences, it is difficult to have exact specification for them unlike physical objects like television sets, automobiles etc. Further, services can't be tested prior to sale to determine its quality. That means services are low in 'search qualities' — attributes that a consumer can determine before purchasing a product, and stronger in 'experience qualities' — attributes that can only be assessed during consumption. Also, there are certain services which consumer find difficult to evaluate even after purchase and consumption i.e. 'credence qualities'. Example of services high in credence quality would include medical diagnosis or an operation. Very few consumers would have sufficient medical knowledge or skills to- evaluate whether such services are necessary and/or performed in a proper manner even after they have been prescribed and produced by the provider. Therefore, the criteria customers use to evaluate services is more complex thereby, increasingly the difficulties of marketers.
- Another very important aspect requiring separate treatment of services quality is the 'inseparability' aspect of services. As you have noticed earlier, inseparability of production and consumption in services reflect the more active part required from service providers as well as the consumer. It is in' his interaction where usually the quality is judged is the consumer (refer to services marketing triangle — Fig. 1.5 — wherein one of the sides is interactive marketing). For example, even if the worker on the shop floor who is producing a T.V. set may not be in a good mood but you as a consumer would never come to know about it. However, if a doctor is not in a good mood it may have a direct impact on the quality perception of the consumer of his services.
- Since services are 'heterogeneous' in nature, ensuring consistent service quality is a big challenge to service marketers.

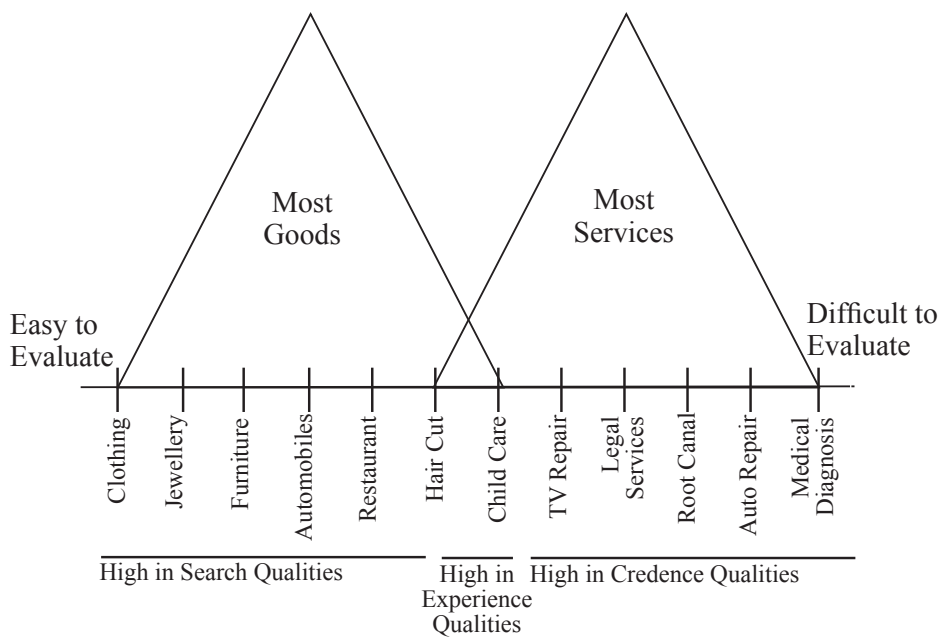


Fig. 17.4: Continuum of Evaluation for Different Types of Products

(Source Zeithaml, V.A, and Bitner, M.J (1966) 'Service Marketing', Mc Graw Hill, p.58)

Service Quality Dimensions

Gronroos (1990) suggests that the quality of service as it is perceived by consumer has two dimensions — a technical or outcome dimension and a functional or process related dimension. That means, the consumer judges the quality not only on the basis of what is being delivered but also how that outcome is delivered. For example for consumer of health care services the primary expectation is related to the response to the illness — 'cure'. The process of achieving this end is characterized by the delivery of service experience — 'care'. As we have discussed earlier that health care services are rich in credence qualities and, therefore, the technical outcome is difficult to evaluate, consumer would tend to make the assessment of the technically complex cure dimensions on the basis of the more familiar 'care' experience. Gabbott and Hogg (1996) suggest that evaluation of the clinical aspect of the service is particularly complex for individual patients but the impact of it upon overall satisfaction is unquestionable i.e. if the patient considers the medical response to have been inadequate, aspects of care can't compensate sufficiently to result in overall satisfaction. However, given the difficulties in adequately evaluating "cure" and the investment that a patient has in believing in the doctor's ability to treat illness, it is suggested that patients take this aspect of the service for granted and evaluate their service provision on the other aspects of service delivery.

Zeithaml, Parasuraman and Berry (1990) have done extensive work in the area of service quality and based on their research work have identified that customers consider five dimensions in their assessment of service quality.

Reliability	Ability to perform the promised service dependably and accurately (example — doctor keeps the appointment on schedule, diagnosis prove to be accurate).
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Responsiveness	Willingness to help customers and provide prompt service (example —no waiting, doctor’s willingness to listen).
Assurance	Employees’ knowledge and courtesy and their ability to inspire trust and confidence (Example - reputation, credentials and skills).
Empathy	Caring individualized attention given to customers (Example - acknowledging patient as a person, remember previous problems, patience).
Tangibles	Appearance of physical facilities, equipment, personnel and written materials (Example - waiting room, examination room, equipment, report cards).

Zeithami and Bitner (1996) suggest that since health care services involve some amount of uncertainty/high risk, assurance dimension would be of great importance to the consumers. In the early stages of relationship, the consumer may use tangible evidence to assess the assurance dimensions. Visible evidence of degree, honours and awards and special certifications may give new customer confidence in a professional service provider.

Poor service ‘quality can be caused by a number of factors. These include organisation’s lack of understanding of customers expectations; not selecting the right service design and standards; inability or unwillingness to meet the standards i.e. not delivering as per the service standards; not matching performance to promises. To provide quality services, an organisation should first learn about consumer expectations through market research. Even in the developed countries, in the not-too distant past, health care organisations had little firsthand familiarity with marketing research. (Marketing Research is the objective and systematic process of gathering, analyzing and interpreting data relevant to a specific situation or problem facing an institution.) However, as hospitals increasingly have adopted a marketing orientation, they are choosing to use marketing research to help them understand marketing problems and opportunities. Loubean and Jantzen (1998) conducted a survey of 230 hospital executives in USA to assess the kind of marketing research activities being conducted by hospitals.

Hospital’s administrators reported that satisfaction surveys of both inpatients and outpatients are the most widely used research applications with more than 80% of the respondents reported usage ‘of these two methods within the last year. Of the surveyed respondents 48% performed a competitive analysis of other institution within the last year and 78% performed this analysis within the last three years. The researchers go on to suggest that “hospitals seeking effective marketing strategies need to recognize that a broad array of marketing research information is available to them. Research is not inexpensive, but it can be one of the hospital’s best values because, if done properly, it leads to better decision making. Hospitals should develop and fund animal research activities’.

Internal Marketing and Service Quality

As you would have noticed earlier in the services marketing triangle that internal marketing plays a critical role in services marketing. It enables the employees to keep the promises that have been made to customers. Internal

marketing can be viewed as the building of customer orientation among employees by training and motivating both customer-contact and support staff to work as a team. The role of employees in a service organization is very dramatically highlighted by Hal Rosenbluth (1992), owner of a chain of successful travel agencies, in his book titled “The Customer Comes Second” wherein he argues that a company’s first focus should be on its employees. “Only when people know what it feels like to be first in someone else’s eyes can they sincerely share that feeling with them” (p. 25).

Similarly Benoy (1996) mentions that for service business such as health care that are labour-intensive and demand high levels of personal contact between the service provider and the customer, no Marketing plan can be considered complete unless it includes strategies for reaching and winning over its internal customers. He further goes on to define internal marketing as “the application of marketing, human resources management and allied theories, techniques and principles to motivate, mobilize, co-opt and manage employees at all levels of the organisation to continuously improve the way they serve external customers and each other. Effective internal marketing responds to employee needs as it advances the organisation’s missions and goals”. The activities involved in internal marketing include, competing for the talent, training employees, empowerment, knowing employee needs, good internal communication, measuring and rewarding quality. You will study more about some of these aspects in the section on Human Resources Management.

Knowledge is empowering. When customers and visitors ask, the employees know what is going on and why. They feel they are the hospital, rather than answering. “They tell me nothing!” If you don’t tell them, if they don’t know, then distorted rumours start circulating. Worse yet, they feel excluded and not a true part of the hospital. Employees, in general, are well motivated and want to do well. Furthermore, no one knows the job better than individual employees themselves. Therefore, if you create an environment in which they feel comfortable enough, knowledgeable enough, about the business to feel that they own the business in a sense, they will contribute — providing, of course, that their capacity to contribute is enhanced by a responsive upper structure of the organisation. (Rabkin and Avakian, 1991)

Check your progress-3

- a) Briefly describe expanded marketing mix
- b) Enlist various dimension of service quality?

17.6 MARKETING COMMUNICATION FOR HEALTH CARE SERVICES

As we have discussed in the beginning of this unit, communication is an essential part of marketing. In fact it is one of the elements of marketing mix i.e., promotion. Few goods or services, despite being well developed, priced and distributed can sustain the market place without effective promotion. Promotion can broadly be understood as “communication by marketers that inform, persuades and reminds potential buyers of a product to influence an

Marketing and Health Economics opinion or elicit a response”. The various elements of promotional mix are advertising, sales promotion, public relations and personal selling.

However, in this section we are going to focus on word of mouth communication, since in case of services, especially services which involve some amount of uncertainty or risk (like health services), consumers tend to rely more on information from personal sources (e.g. friends) than from non-personal sources (e.g. mass media). Therefore, word of mouth (w.o.m.) communication becomes a critical part of health care marketing. Before moving further let us study a definition of word of mouth communication. It may be defined as “Oral, person-to-person communication between a receiver and communicator whom the receiver perceives as non commercial regarding a brand, a product or a service”. Though not under the direct control of marketer, they can still influence it. A health care marketer might ask how favourable word of mouth can be prompted, unfavourable word of mouth reduced — and since either effort will likely require marketing expenditures, what results can be expected. Besty and Madeline (1995) have highlighted a number of issues regarding word of mouth communication in health care marketing:

- i) Word of mouth is more effective than advertising. And in the health care field, the difference is even more striking than in other purchase categories.
- ii) The effectiveness of word of mouth applies across the board in terms of the kinds of responses marketers traditionally seek. Word of mouth communication not only increases awareness and knowledge, but it also persuades and lead to action, such as actually choosing the provider one has heard about.
- iii) Favourable word of mouth of communication can’t overcome personal negative experience.
- iv) Health care organisations should encourage its employees, their spouses to become involved in community and neighbourhood groups and to educate them on what to say when they get there, in the hope that a source of word of mouth communication is listening.
- v) Word of mouth increases as the level of satisfaction increases. An emotionally positive experience with a health care provider increases word of mouth and satisfaction which in turn, raises the odds that word of mouth will be positive. A marketer, therefore, has an opportunity to enhance experience that leads to positive word of mouth So, health care marketers should seek a mandate to provide emotional highs to the patients and present strong emotional negatives, even if these goals involve serious trade-off.
- vi) Consumers of medical care are more likely to engage in negative w.o.m. than they are to complain to their health care provider. Health care providers, therefore, must make a greater effort than marketers in other industries to make complaining easy and acceptable.

17.7 SOCIAL MARKETING

You have already learnt about the concept of health services marketing and the factor affecting the same. In this section you will learnt about the application of marketing concept and strategies to promote public health.

Social marketing is widely used to influence the health behaviour using wide range of health communication strategies based on mass media; Interpersonal and other modes of communication. Now let us look at the essential elements for any marketing campaign and see how they work within the social marketing sphere. These are four essential elements for any marketing campaign. These 4Ps are also known as the “marketing mix”.

- Product
- Price
- Place
- Promotion

Let us define these factors.

Product: it is the desired social action and the benefits this action affects. Make sure that the audience quickly and easily understand the product and its benefits.

Price: Minimize the price that people believe they have to pay for the desired social action to take place. This price is not about the money but also about the minimising the difficulty. Time and psychological / emotional cost that people will have to incur you will need to think about the obstacles that hinder the people from performing the and feasible ways to behaviour overcome these obstacles.

Place: Now where do you want your audience to perform the desired behaviour?

Promotion: This one ties all the 4 ‘Ps’ together.

- Identify the channels and outlets for reaching the audience and draw their attention.
- Social Media
- Television and Radio
- Signboards, billboard
- Events such as concerts, expos and community Lounge
- Drawing the attention to the product, price and place of action.
- Plan strategy
- Select channel and materials
- Develop materials and pretesting
- Implementation
- Assess effectiveness
- Feedback for improvement

Check your progress – 4

- (a) What is word of mouth (w.o.m.) communication?
- (b) Enlist 4P’s of social marketing?

17.8 LET US SUM UP

In this unit you have learnt that marketing, broadly can be viewed as business activity that brings the products to the customers - the products they want, at the time they want them, at place they want them, at price they can afford and also providing all the information customer needs to make informed and satisfying choices. Regardless of specialization or different responsibilities all health care services providers need a basic understanding of marketing.

The term service includes a wide range of services including health care services. Further you learnt that services marketing requires a different treatment as compared to goods marketing because of the distinctive characteristics of services. Which include, intangibility, heterogeneity, inseparability of production and consumption and perishability. Subsequently you learnt about the traditional 4 P marketing mix Is inadequate' and services marketing entails an extended 7 P marketing mix which includes Product, Price, Place, Promotion, People, Process and Physical evidence.

The aim of service marketers is to present a unique blend of these seven marketing mix elements in order to deliver excellent or superior service relative to customer expectation! For health care marketers, this could include not just taking care of the 'cure' (outcome aspect) but also the 'care' aspect (process). For achieving this, internal marketing is of crucial importance. Further for health care services, which involve some amount of uncertainty or risk from customers' point of view, word of mouth communication plays an important role. Towards the end, you have learnt about the concept purpose and process of social marketing.

17.9 KEY WORDS

Internal marketing	Application of marketing, human resource management and allied theories, techniques, and principles to motivate, mobilize, co-opt and manage employees at all levels of the Organisation to continuously improve the way they service external customers and each other.
Marketing	The process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and Services to create exchanges that satisfy individual and or organisation goals.
Market Segmentation	Process of dividing a market into meaningful, relatively similar and identifiable segments or groups.
Service	An activity or series of activities of more or less intangible nature that normally, not necessarily. take place in interaction between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems.
Service Quality	Service quality is the delivery of excellent or superior service relative to customer expectations.

Word of mouth communication	Oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial regarding a brand, a product or a service.
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17.10 ANSWERS TO CHECK YOUR PROGRESS

Check your progress-1

a) What is Marketing Mix?

The marketing activities into four basic elements which are together referred to as the marketing mix. The four basic elements are:

- Product
- Price
- Promotion
- Place

As all these four starts with letter 'P' they are, at times, referred to as the four Ps of the marketing mix or the 4Ps in marketing.

b) What is Market Segmentation?

Market segmentation refers to the process of dividing a market into meaningful relatively similar and identifiable segments or groups. This helps in a better understanding of needs and wants of the customers and thereby fulfilling them in an effective way.

Check your progress-2

a) Enlist characteristics of services?

For majority of services, four basic characteristics can be identified:

- Intangibility
- Heterogeneity
- Inseparability of production and consumption
- Perishability

b) Enlist marketing strategies?

The marketing strategies for Intangibility are ;

- Increase service tangibility
- Stress tangible cues
- Simulate or stimulate word-of-mouth communication
- Create strong organisational image
- Promote brand names
- Use cost accounting to set prices
- Engage in post purchase communications
- Manipulate the atmospheric

The marketing strategies for Heterogeneity are:

- Proper person selection and training
- Have systems for monitoring customer satisfaction

Marketing and Health Economics • Industrialize service through use of technology

- Customize service

The marketing strategies for Inseparability of production and consumption are:

- Emphasise selection and training of public contact personnel
- Learning to work with larger groups
- Manage' customers
- Train additional service providers
- Use multi-site locations

The marketing strategies for Perishability are:

- i) Use strategies to cope with fluctuating demand like:
 - Differential pricing
 - Reservations systems
 - Consumer participation
 - Part time employees etc.
- ii) Make simultaneous adjustments in demand and capacity to achieve a closer match between two

Check your progress-3

- a) Briefly describe expanded marketing mix

These are:

- **People-** All human actors who play a part in service delivery and thus influence the buyer's perceptions; namely, the firm's personnel, the customer, and other customers in the service environment.
- **Physical evidence-** The environment in which the service is delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of the service.
- **Process** -The actual procedures, mechanisms and flow of activities by which the service is delivered – the service delivery and operating system.

- b) Enlist various dimension of service quality?

Zeithaml, Parasuraman and Berry (1990) have done extensive work in the area of service quality and based on their research work have identified that customers consider five dimensions in their assessment of service quality.

- **Reliability-** Ability to perform the promised service dependably and accurately (example — doctor keeps the appointment on schedule, diagnosis prove to be accurate).
- **Responsiveness-** Willingness to help customers and provide prompt service (example —no waiting, doctor's willingness to listen).

- Assurance-Employees' knowledge and courtesy and their ability to inspire trust and confidence (Example - reputation, credentials and skills).
- Empathy -Caring individualized attention given to customers (Example - acknowledging patient as a person, remember previous problems, patience).
- Tangibles -Appearance of physical facilities, equipment, personnel and written materials (Example - waiting room, examination room, equipment, report cards).

Check your progress – 4

- (a) What is word of mouth (w.o.m.) communication?

It may be defined as “Oral, person-to-person communication between a receiver and communicator whom the receiver perceives as non commercial regarding a brand, a product or a service”.

- (b) Enlist 4P's of social marketing?

The four essential elements for any marketing campaign, 4ps are :

- Product
- Price
- Place
- Promotion

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UNIT 18 PRICING OF HEALTH SERVICES

Structure

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- 18.8 Let Us Sum Up
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18.0 OBJECTIVES

After going through this unit, you should be able to:

- describe the concepts underlying price setting;
- explain the relationship between costs and prices;
- define the various objectives that may be sought while deciding the prices of the services.
- explain the various methods of pricing;
- select a price appropriate for your own health services; and
- apply the understanding of consumer perception of prices to your pricing decisions

18.1 INTRODUCTION

Pricing is one of the most important decisions that you as a provider of health services will have to take. The sheer variety of available price levels for similar services among different providers of medical and health services is indicative of the differential practices that are being used to arrive at the ultimate price for various services. In this unit you will learn about the conceptual basis of price setting, the different objectives that may be sought in price setting and the various bases that different establishments apply to arrive at the final price.

The unit also includes some of the operational issues that need to be considered in relation to administering the pricing policy. This unit presumes that you have already gone through and understood the breakeven analysis explaining costing of health services, as you will use the concept of costs in terms of their relationship to prices. This unit also briefly discusses why pricing for services like medical services is different from pricing of tangible products. One of the key determinants in any pricing decision is the consumer's perception of the value he gets as a result of availing a particular treatment. As consumers evaluate prices in a different way for services that they do for products, it creates both opportunities and problems for providers of health services. These issues are discussed at length in this unit.

18.2 PRICING - THE BASIC FOUNDATIONS

All medical service establishments, except the public ones, are dependent on revenues from patients as a significant and sometimes the only source of their incomes. These incomes are a function of the prices they charge for their services and the number of customers who avail these services. Interestingly however, for routine and standardized medical services like a health checkup or vaccination or a tooth extraction, the price charges would often determine how many customers would avail the service in a given establishment. In order to understand price determination fully, you must be aware of the basic fundamentals of price setting, specially in the context of hospitals as providers of medical services.

The pricing strategy for any given service, including medical services depends on three basic fundamentals. These are costs, value and competition. The

costs represent the monetary value of everything that the organisation has to utilize in order to create and offer the service for the patients. In the short run or the long run, all costs must be recovered if the organisation is to earn profits. Costs thus represent the lowest limit below which in the long run, prices cannot be set. On the other hand, you cannot set the price, beyond the value that your customers assign to the service, simply because at that price level, exchanges (or purchase of service) will not take place. Consumer's perception of value of a given service would thus set the upper limit beyond which prices cannot be set. Between these two limits service organisations may have the freedom to charge whatever prices they determine, but for the presence of a third variable, the competition.

You are not the only provider of health services in the market. There may be several other providers with similar or better services. The prices that your competitors charge for a similar service will limit your freedom of setting prices between the two limits provided by the costs and the consumer's concepts of value. The prices being charged by the competition would thus determine the actual level at which prices for a given treatment or service may finally be set in between these two limits. To recapitulate the three basic variables that are fundamental to any pricing decision are:

- How does my consumer define value for a given service?
- What are my costs in providing that service?
- How does my competitor price the same service?

Subsequently, we will try to understand why the pricing of health services has to be dealt differently as compared to pricing of products.

18.3 WHY IS PRICING FOR MEDICAL/ HOSPITAL SERVICES DIFFERENT FROM PRICING FROM GOODS

In order to realistically set your prices, you should be able to have an appreciation of what role does price play in the customers' decisions to avail a given medical service or health plan. Health providers must, therefore, have a clear idea about how their prospective client population perceive prices and price changes of various medical services offered by them. The three basic ways, in which pricing for hospital/clinical/medical services differ from pricing for goods are the issue of customer's knowledge of prices, the role of prices in indicating quality of services and the issue of non-monetary costs.

18.3.1 Prices of Hospital Services and Customer Knowledge

How important is price to the customer when he/she tries to select a particular hospital/ practitioner for a particular treatment? Do customers have any idea at all about the costs associated with such services? Do customers really have clear awareness about the exact prices they would be required to pay for a given treatment before they decide to avail of a given treatment? Let us briefly look at these issues and their implication for pricing of health services. To take a simple exercise, ask adult people around you a few questions about health services and their prices. For example, what is the

price for a medical checkups in your city? What is the price for a service like a root canal operation, or a simple tooth extraction? What is the price one is likely to pay for a bone setting process after a fracture and so on? You will find that few people will be able to answer accurately on the basis of their memory alone, because clear ideas about such prices are not available. The price point in our memory for a product or service is called the 'reference price' for that product or service. Very few prospective patients have a clear reference price for the range of health services provided by hospitals and clinics. Let us examine some of the reasons for this phenomenon.

Health services are intangible, and can be offered in a variety of configurations with variation in accompanying services. Hospitals, therefore, are able to create a number of permutations and combination of a given treatment package, resulting in complex pricing structures. If a prospective customer wanted to have comparative assessments of prices for a Ceaserian section, she/he would find that the type of package varies (length of stay, associated services provided), patient particulars may vary and necessitate price variation (complexities, age, medical condition), the level of services may vary (single vs. double room, patient to nurse ratio etc.) Few hospitals would offer exactly the same features or package of services. Prices are, therefore, not strictly comparable.

The problem becomes compounded on account of the fact that in quite a few cases medical providers may be unable to give an accurate price figure in advance as they may not, at the very outset know what a given treatment would ultimately involve. In case of health services, customer's individuals needs also result in different prices being charged. Previous history, general medical condition, age, related health complications etc. may often determine the course of action that would need to be taken for a given patient, final prices, therefore, may also be a function of individual needs of different patients.

It is also comparatively difficult to gather accurate pricing information of all comparable hospitals, because unlike retail outlets displaying prices on their merchandise, prices of health services are not really displayed except for routine services and consultation charges.

It must now be clear to you that prospective customers often possess inaccurate information about prices of health services. The implication of the fact for your pricing by finding some ways of communicating prices at least for all routine services; creating of price visibility is an issue that many hospitals consider seriously.

The second implication is that while the customer may not 'know' the final price until after he has been in the service transaction for some time for his initial treatment, prices become an important criterion for repurchase of the service as the customers' knowledge of the service costs has now become more accurate.

18.3.2 Prices and Quality of Health Services

One of the interesting things about service prices is that because other cues to quality of service are seldom available, customers tend to use prices as indicators of service quality. In case of goods, the tangible nature

of the product and the possibility of physical examination by touching smelling feeling enables a customer to have an assessment of the quality of the product before he buys it. In case of services which are intangible, such pre-purchase assessment is difficult. Research shows that in case of most services, because other tangible indications to assess quality are not available consumers use physical evidence and price as surrogate indicators of service quality. Wherever pre-purchase assessment of quality is not easily assessable high prices in the consumer mind get associated with high perceived quality.

Medical services are among the services which are high on credence qualities, where evaluation of service quality even after experiencing a given service (for example a by-pass surgery) is difficult to make. In such situation's consumers depend on prices as a cue to quality. Prices for medical services, therefore, must be determined keeping in mind the fact that price and quality for such services are positively associated. In addition to cost coverage and/or meeting the competition, prices must be set to convey an appropriate and desired quality image.

18.3.3 Costs other than the Monetary Cost

There is an increasing realisation on part of service providers that apart from the monetary cost, customers have to bear several non monetary costs also while availing a given service. Sometimes these costs affect consumer valuation and affect his choice of alternative service offers. These costs include time costs, search costs and psychic costs.

Health services require direct participation of the patient and thus require him to spend both waiting time and interaction time with the hospital subsystems registration, specific tests and of course the doctors. For any given appointment his time spent may comprise both waiting time and time with the doctor. Time spent in availing a given service represents a specific cost to the customer. Some health services, specially the costlier ones like a bypass surgery require the customers to go through a lot of information search to identify the best possible alternative offers are comparable, one variable may include apart from the prices, the expertise of the doctors, facilities offered, location etc., such costs are sometimes considerable and also have to be borne by the customer. Sensory costs are the other class of costs that may make a difference. Unpleasant sounds, noise, crowds are some of the sensations that most people are uncomfortable with. In hospitals that are located in crowded or squalid neighbourhoods, or are overcrowded customers may have to bear these costs: If there are alternatives which are available, customer may like to avoid the sensory costs, even if they have to pay a little higher.

For health services, one of the most potent costs are the psychic costs — not understanding the service feat of uncertainty, feat of undesirable consequences like pain, disability or loss of control are very important in the customer's decision to avail or postpone a given medical transition. Providers of health services, therefore, must be aware of not only the monetary costs like cost of time, cost of search, sensory and psyche costs because these costs offset consumer valuation significantly and should this be an input in pricing consideration.

18.4 ROLE OF PRICES AND CONSUMER VALUE

Exchanges of goods and services take place when the buyer of a given service feels that the goods or services being bought by him are at least as valuable to him as the money he is spending in buying those goods and services. The case of health and medical services is however slightly different. As there are many instances under which the customer's need for a given treatment or check up is a non-postponable or emergency purchase and often a necessity, the exchange will take place even if prices are not suitable to the customer. He will however, if competitive offers are available, try to find the best possible return for his money. The return again is dependent upon how a given customer defines value that he gets in a given transaction.

Different consumers may perceive value differently. To some value may mean low price, others may perceive value in terms of associated service, comfort, speedy disposal, and privacy.

The implication of the concept of net value for pricing decisions is that, while evaluating whether a given price is right for a given medical service, the customer may look at all the perceived benefits that he would receive as a result of the service transaction. He would also analyse the costs that he has to bear in order to avail the service. The higher the difference between the sum total of perceived costs and the sum total of perceived benefits greater will be the net value of the service in the eyes of the customer. You can imagine a balancing act being carried out in the customer's mind, while he tries to offset the perceived benefits of the service against the perceived total cost. If the perceived costs are found to be higher than the total perceived benefits, the transaction will be looked upon as having net negative value and, therefore, not desirable at that particular price. Of interest to marketers is the fact that the evaluation of net value can be changed either by increasing the perceived benefits to the consumer or minimising perceived costs or managing both.

The net benefit apart from the core benefit of health added could include value to the health service in terms of personalised care, individual attention, higher quality of medical personnel, high success rates, ensured privacy, exclusivity of service, corporate health plans enabling speedier medical reimbursement, instalment payment plans, accepting payment through credit cards or cheques etc. Perception of net value can be increased by giving some of these additional benefits. Reducing the costs side may not necessarily mean cutting only the monetary costs. Perceived costs of availing the service by the customer could also be reduced by:

- Reducing waiting time, reducing the time taken in giving test reports, ensuring all appointments are meticulously managed and kept.
- Reducing the information search costs by providing required information readily and easily.
- Facilitating access to services like facilities, accounts and amenities.
- Reducing unnecessary physical effort that customers may be required to make to avail the facilities and services
- Reducing levels of stress associated with a given treatment through information sharing, consultation and counselling.

- Marketing and Health Economics**
- Minimising sensory cost like noise, unwelcome sights and smells, offensive behaviour of support staff and so on through creation of attractive, pleasant visual atmosphere, noise reduction and training of personnel.

Reduction in these costs, will enable the customer to perceive higher 'net value' in the service. It can also enable the provider to enhance the monetary price charged or have greater pricing freedom because he is now able to manage a higher net perceived value in the consumer's mind.

Perception of value are important in marketing of health services because buying decisions do not get made on reality but on perception of reality. The fact that prices are perceived to be high or reasonable by the customers is thus dependent upon whether they perceive the price as being commensurate with the value that they receive.

The providers of services in health care must also be sensitive to the fact that customer's evaluation of 'net value' may vary sharply pre and post utilisation of the service. As health care is a service where repeat use by the same customer or members of his family is a frequent possibility, post purchase evaluation may have important implications for repurchase of services when customers find that costs of a given stay in the hospital in terms of monetary or some of the costs described above, were higher than what they anticipated at the time of making the buying decision or that the anticipated benefits were not received fully, their evaluation of net value, may go down sharply and may result in absence of repurchase as well as loud word of mouth publicity for the hospital. Prices, therefore, have to be reflective on the perceived net value in terms of giving the consumer a positive figure on the balance of net perceived benefits and net perceived costs.

Check your progress-1

- i. List the basic variables for decision making.
- ii. Enlist strategies to minimize the various types of cost.

18.5 PRICE SETTING IN PRACTICE AND PRICING OBJECTIVES

Under this section let us look at the various pricing objectives that health service establishments may seek when they determined their prices and then identify the various bases that are applied by them to arrive at a final price.

18.5.1 Pricing Objectives

Fundamental to any decision on pricing is your understanding of your pricing objectives or simply put answering the questions "what do I want my prices to do for me/my organisation". Is the basic objective maximising your profit, or maximizing patronage or sheer survival at a given point of time? Understanding pricing objectives will help you appreciate the outcomes that you want your prices to achieve and this would direct your price setting efforts. Pricing objectives may be revenue oriented, operations oriented and patronage oriented. The approaches that can be used to arrive at the final price are costs based pricing, competition based pricing and demand based pricing. Let us discuss these in the following subsection.

18.5.2 Revenue Oriented Pricing Objectives

Revenues represent the surplus of income over your costs. Health establishment in the private domain, if they are established as profit seeking organisation, will seek to keep their prices at levels that will enable them to earn the greatest possible surplus on their costs. Even in the public domain, health establishment cannot afford to overlook the revenues or at least consider carefully that prices are set at levels that enable the revenues to at least cover the costs if not generate profits. The various revenue-oriented objectives that may be sought by health services provider may include:

- Maximising the surplus or revenues.
- Achieving a certain target rate of return on your investments.
- Cover cost of providing one particular service.
- Cover incremental costs of offering a given service.

Apart from these revenue-oriented objectives you may sometimes come across two other classes of objectives which are usually applied in cases of new or innovative services. These objectives are: Market Skimming Objectives, Market Penetration Objectives, Operations Oriented Pricing Objectives and Patronage Oriented Pricing Objectives .

18.5.3 Market Skimming Objectives

When a new or innovative health service is introduced in the market, for example, a new diagnostic test (ultrasound test, MRI Scans, are good example of this technique of pricing) the providers on account of the fact that there are only few providers who can offer the services try to charge an initial high price so that the initial return can be very high. This enables them to encash their near monopoly position at the initial stages of the service being introduced in the market. Market skimming as an objective is generally followed when the expectation is that competition for this new service will soon emerge in the form of other providers. Starting to offer the same service-when competition starts emerging prices are brought down to a more reasonable level, allowing the organisation to still earn profits but not at the introductory levels.

18.5.4 Market Penetration Objectives

Alternatively when an innovative service with a high market potential is introduced in the market, but customers resistance to the service on account of its novelty is also high, a low initial price is sought to be charged, to enable the potential customers to try the services and be convinced of its value. This is called the market penetration objectives as it enables the organisation to gain entry in a market and then develop its market overtime. As larger number of customers, realising the value of the service start demanding the service, the prices are gradually raised to enable the earning of a targeted rate of return.

18.5.5 Operations Oriented Pricing Objectives

This objective is usually applied in case of service organisation where there are large differences in volume of demand at different times, so that the situation of under utilisation of capacity and overfull demand may alternatively be confronted by the organisation depending upon the

Marketing and Health Economics seasonality of demand. The prices, therefore, are sought to be set in a way that allows price variation over time so that demand matches available supply at any given point of time. Special weekend packages in developed contracts pricing, are an example where low prices on weekends are used to off set the low hospitals. bed occupancy weekend. Hospitals in our country on the other hand are severely supply constrained organisations where demand for hospital services far outships the available supply. Operations oriented Objectives are thus rarely applied except in cases where specific full equipment utilisation is sought to be achieved through such practices.

18.5.6 Patronage Oriented Pricing Objectives

Hospitals like all customer-based organisations are dependent for their growth on the number of customers who choose to patronise them. Health providers may, therefore, sometimes, deliberately seek to set prices at levels which are directed at enhancing patronage rather than being based purely on costs or revenues. These objectives may be:

- Subject to a certain level of revenue, try to maximise patronage if capacity is not a barrier.
- Identify that different segments in your market have different paying capacities and create pricing structures that will enable patronage from different segments.
- Identify that alternative strategies like paying through credit cards or organisational billing may actually enhance customers willingness to patronise your establishment

This description of the various pricing objectives that may be sought by hospital health service providers is not exhaustive. Other objectives that may be sought to be achieved through pricing can include survival market development, maximisation of current revenue, maximisation of market skimming overcoming customer resistance to trial of a given service achieving a quality leadership etc. The organisation should however have a clear focus on what objectives are sought to be pursued through the pricing decision to enable a clear definition of what bases would be used to arrive at a pricing figure.

18.6 BASES USED IN PRICING

18.6.1 Cost based pricing

You shall now know the pricing methods using the various bases i.e. cost, competition and demand. Generally used as a pricing basis for revenue oriented pricing objectives cost based pricing methods are among the most prevalent methods of pricing in a large number of organisation. The reasons are simple. You often feel that there is less uncertainty about costs than about factors like demand or consumer evaluation of value, costs are internal data and may be more controllable. In the cost based pricing approach, hospitals will be required to determine expenses accruing on account of raw material, labour, human resources and machinery; add amounts or percentage for overheads and then add the margin for profit thereby arriving at the price. Price would thus be a sum of direct costs plus overhead costs plus the profit margin desired to be earned on investment. This however looks much easier

than it is. Let us look at the various costs that you would need to estimate before you arrive at the inputs for this pricing equation. (You have already learnt the basic costs concepts in previous units).

Fixed costs are those that do not vary with the volume of operation, and continue to be incurred if the health services are not being offered. These include costs like rent of the building, insurance, taxes, depreciation, administrative salaries, salaries of the full time medical and nursing staff, utilities like water and electricity, security, cost of capital invested, maintenance costs etc.

Variable costs are those that vary with the level of output (or operation in this case) and are thus dependent upon the number of patients served by the hospital. This would include costs involved in calling in consultants for a specific patient, costs of test conducts, wages and salaries incurred in paying overtime for additional manpower required costs of medical supplies etc. Conceptually, the organisation must be able to calculate its total cost per service transaction by adding up the variable costs component per service and the proportion of unit fixed costs allocated to those services and add to this total unit cost, the margin that is desired to be earned to arrive at the price figure for that service. In the long run every organization must operate at a price level which allowed it to earn a certain margin after covering both fixed and variable costs.

You have already learnt in the unit on break even analysis and how break-even point can enable identification of both the level of operation and the safety level at which the, organisation should operate. The difference between the final price and the variable costs, called the contribution margin is indicative of the amount that is available with the organisation to cover its fixed costs and if possible to earn a margin of profit. Since information about costs is the basic input in arriving at a pricing decision, this approach is referred to as cost based pricing.

There are however several problems associated with purely cost based pricing approaches, specially in case of hospitals where multiple services are being provided. The main difficulty arises in allocation of costs. It is for example very difficult to decide what proportion of costs of land and building should be allocated to outpatient services or the surgical services? What should be the basis of allocation — should it be the proportion of space occupied or should the cost be equally allocated to all services. How should the salary of administrative staff be charged to per unit service transaction? These are difficult issues and required either a simple overall overhead calculation which is their equally allocated to all services (which would be arbitrary) or detailed costing exercises which may prove to be extremely time consuming. The second major problem is that a large proportion of cost is composed of cost of people (both doctors and administrative personnel) which is, very difficult to allocate on a per unit basis. There are also interesting variations in the type of work that gets created in a hospital which has implication for costing and pricing.

While an X-ray charge may be based on fixed and variable costs related to the X-ray machine and the machine operator, how does one really costs the time or the expertise of the professionals who has to interpret the film and

prepare a diagnosis? How does the costing really get done if the diagnosis is a team effort or consultative process? These issues sometimes render cost based pricing a non realistic exercise and estimation instead of actual figures start getting applied. Yet on the basis of historical data and analysis of costs incurred in the past period, health providers use cost based pricing extensively. Two variations of the cost based pricing technique are generally used. The first is based on deciding about a mark-up on costs of offering the service and then charging a final price based on total cost + mark-ups. Hospitals also tend to vary mark-ups within the same establishment. Mark-ups may vary inversely with the volume of services sold, the higher volume the service the lower the mark-up, for example paediatric vaccination. The lower the frequency of service the higher may be the mark-up. Others may vary the mark up on the basis of industry practice; still others may follow a practice' of fixed mark-up like-20-30 % across the services.

The second cost based pricing technique is based on earning a targeted rate of return on investments wherein the organisation bases its pricing decision on identifying a certain percentage rate of return that is desired to be earned on the total investment made. The total revenue that must be earned on the investment is thus calculated and the proportionate allocation is then done across services to enable the actual total revenues as per the desired rate of return.

18.6.2 Competition Based Pricing

The approach here is to base the pricing decision on the prices charged by other comparable providers. As noted earlier, service providers in the health sector may not be strictly comparable. Yet for routinely bought services like periodic health check, dental cleaning, tooth extraction, X-rays, diagnostic tests etc. consumer knowledge of competitive prices is higher and the possibility of varying prices very much from the going rate is not very high. The higher the degree of standardisation in certain medical/ health services (i.e. blood test) the higher is the tendency for prices to cluster around the going rate prices. There are however location variations in the level of the prevalent prices with the going rate higher in large town or metros. This does make economic sense also as cost of offering medical services in metropolitan towns versus a small town may be much higher.

18.6.3 Demand Based Pricing

The third approach to pricing, demand based pricing is based on the consumer ability to pay or willingness to buy at a given price. Provider of health services typically base their, pricing decision on consumers' perception of value of the service offered. Consumers' perception of value in case of health services, which are highly intangible in character and whose quality is extremely difficult to judge prior to the purchase of the service are dependent upon a number of variable. Among them are service cures like exclusivity of the service, the brand name, the perceived non-monetary costs (discussed earlier) and other assessments like physical infrastructure and word of mouth publicity from friends, relatives and other users. Central to the concept of demand based pricing is the understanding that different segments of consumers will have different perception of the value they perceive in differently priced services, that different segments

will have different capacities to pay and also that apart from the core benefit of freedom from disease or discomfort, some segments may look for other augmented benefits in the service package and may be willing to pay for them. Let us look at how different pricing strategies, under demand based pricing may be followed when consumer's definition of perceived value differs.

18.6.4 Pricing When Value to the Customer is Low Price

There are segments of the market where actual price to be paid may be the most important criterion of choice to the consumer. To go further, sometimes a reluctance to avail a given medical service may actually be sought to be offset by keeping the price very low. The technique that are followed in such conditions where the customer is acutely price conscious or defines value as being 'low prices' include the following.

18.6.5 Price Discounting

Hospitals may carry discounted prices for vaccination for certain fixed periods, when such services are targeted to low income segments of the society, to overcome the apathy or enable purchase by large sections of consumers. Discounts usually are offered on basic routine services. It must however be borne in mind that no amount of discounts would promote purchase unless the consumer has a felt need for the service. Health checks like regular mammography; pap smear tests etc. have a less than actual demand because a large section of population is not alive to the need for such tests or postpone them for psychological reasons.

18.6.6 Odd Pricing

This is the pricing technique used to create a lower perception of the price and entails in pricing the service just below the rounded rupee figure so that consumer feels he is paying a lower price. Off pricing is an example of psychological pricing and works very well in competitive markets specially for basic or routine services, where specialised skills may not be called for, but where the perceived lower figure becomes a determinant of repeat purchases.

18.6.7 Place Differentiates

Locations partly because they define market segments indirectly also sometimes determine the prices that will get charged. When doctors operate more than one clinic they may charge different prices in different locations depending upon the clientele's differential ability to pay.

18.6.8 Quality Differentiates

Bulk discounts such as corporate and organisations purchases are increasingly becoming common in health services as on the one hand organisations are making attractive medical reimbursements an integral part of their HR policies while on the other hand hospitals are becoming conscious to the necessity of having an assured and steady customer bases, the demand of which does not fluctuate widely.

18.6.9 Penetration Pricing

Discussed earlier under the market penetration objectives in pricing thus pricing strategy is followed to introduce new services at low prices so that

Marketing and Health Economics trial may be encouraged. The strategy is specially useful where the threat of potential competition is very high. Care must however be taken that the initial prices should not be kept so low that they result in customer resistance when regular pricing is done, once the service becomes competitive.

18.6.10 Pricing Strategies when Consumers Value Perception includes Augmented Services and Prestige.

Under such conditions when customers are willing to pay higher to get the desired package of additional conveniences or exclusively or personalised attention, monetary prices do not remain the main consideration in selection of a given service provider as high prices may actually be seen as being indicative of high quality or esteem attached with the provider and, therefore, the purchase high prices may actually be preferred prices. The strategies that may be followed are price skimming and prestige pricing. Price skimming is confined to introducing new services at price premium, accompanied by high promotional expenditure (discussed earlier under market skimming objective). Prestige pricing on the other hand is a demand based pricing where markets, looking at the kind of demand or clientele they have, offer high quality service at very high prices. Examples could be exclusive plastic surgeons, physiotherapists, psychiatrists who have a limited but high margin clientele and part of the status is generated by the exclusivity of the service. Services are consciously priced very high in keeping with the high level of service quality that embodied the service. Value additions may also take the form of privacy, comfort, personalised care, high doctors to patient ratio etc.

18.6.11 Pricing Strategies when Consumers' Perception of Value is Value for Money

When customers insist upon getting due value for money prices, service providers resort to value for money price, the two strategies that are generally followed here are:

18.6.12 Value Pricing

This strategy, based on the understanding of evaluation that the consumer will make on getting his money's worth, this pricing technique frequently used in the hospitality sector, entails in 'giving more for less'. It generally involves building together some related services that are, needed by a large number of people and pricing the package lower than the services would have cost individually. Examples in the health sector can be found where camps for specific medical package like an eye camp, or vaccination camp are organised with two or three organisations coining forward to provide various services. The bundle has a large user base, and the price of the complete package, registration, medical transaction, brief stay and post transaction care is lower than the services would have cost individually. This is possible because of collaboration service assembly by two or three organisations.

18.6.13 Complementary Pricing

Sometimes called loss leader pricing — this pricing technique identifies complementarily between some of its services. While the basic service is priced low, the peripheral services can be priced to absorb some of the cost of the basic services and priced high. Examples could be a doctor charging

low initial consultation but the prices for various treatments could be priced to take care of margins for both services. A dental clinic may have low consultation or registration charges but may price the follow up services like a root canal operation or a ceramic bridge assembly at a higher price. Hospitals may use low registration and room charges, but the consultant doctor's fees or the treatment like the charges for the operation can be kept high. The low prices of some services are thus allowed to complement the higher prices of the other services in the total package.

18.6.14 Price Bundling

A careful look at services provided by hospitals would show that patients utilize multiple services which go on to form a package. Not all patients would want to or need to utilize all associated services within a given package. Price bundling is a strategy which enables a hospital to identify differential packages of associated services and price the 'bundles' of services differentially, on the basis of how many associated services form a given bundle. A given patient having had an operation, may want to have round the clock nursing support and follow up nursing support at home when discharged, frequent checkups and weekly visits to one of the consulting doctors. Another patient having had a similar operation may be willing to use family support for his post-operative general care, and may like to use the nursing help only for administering medication and needed paramedical support. It should be possible for the hospital to identify that these two cases actually make up two different service packages and thus price them differentially.

Price bundling is based on the understanding that it is possible to look at the service provided by the hospital as consisting to certain core services surrounded by levels of augmenting services. There may be patients wanting to avail all the facilities offered by the hospital and willing to pay for them. Others may want just the bare bone core service and not the associated augmented services or may want to pay for only a lower level of augmentation. Recognising this differential ability to pay, the hospital could look at different 'bundles' packages that can be created for different segments of consumers and offer multiple packages at different price levels.

18.6.15 Market Segmentation Pricing

While health care and medical attentions, freedom from disease and pain are basic human needs, the market for health services is not a homogenous market, in that different customers have different abilities or willingness to pay, they differ in the levels of "quality" or comfort or associated value addition they may want, they differ in their sensitivity to prices and so on. Recognising this, health service providers segment their markets and charge different price to different group of customers. Public hospitals for examples have different price structures for non income tax payers, and sometimes for senior citizens above a certain age. A large number of private hospitals have a certain proportion of beds which are categorized as 'free' beds where the patient may have to pay only minimum charges for same services.

Another form that market segmentation takes place is where the hospitals have different categories of rooms like a general ward, single, double, deluxe or super deluxe categories and price them differentially. Here the

Marketing and Health Economics prices are supposed to be rationalised on what is perceived to be different quality level of associated services, even though the costs of providing these services at the different levels may not be translated proportionately in the price differentials. A doctor giving post operative examination to a patient in the general ward and to another patient in deluxe room may spend the same time, let us say 15 minutes each in both situations, yet the overall price charged in the two categories will be different for instead of cost based pricing, demand based pricing has been applied to ensure demand from all segments and Maximise total returns.

18.7 IMPLEMENTING THE PRICING POLICY: STRATEGIC CONSIDERATION

You must now be clear about the various bases that can be utilised to arrive at your pricing decision. In addition to variables like costs, demand and competition and the considerations of your own objectives in arriving at a pricing figure, there are certain issues which demand decision before you can implement and administer a pricing strategy. Lovelock has clearly focused on these issues in terms of key questions that must be addressed while determining the pricing strategies.

How Much to Charge

As noted earlier in the beginning of this unit, the issue of costs is important for the pricing decision. The health service provider, however, would need to decide upon the relevant costs that must be considered while arriving at the pricing decision. Is the hospital trying to cover only the variable, costs or all the costs, whether it has decided to allocate a share of the fixed costs across all priced services and is seeking to get them also covered? Is there a way in which costs of fixed goods such as land and building can be spread over all services or over period of few years? Should the hospital have a basic package of core services priced at a certain level and then keep on adding to the price depending upon the scheduled in advance of the actual treatment. In addition, very often in the beginning of the treatment, the service provider is rarely ever completely sure as to what costs the treatment will actually entail, the complication that may arise, the additional services that may need to be provided. It is, therefore, prudent to ask for an initial deposit and then identify the billing inputs as they accrue.

How Should Prices be communicated?

Once the decision on how much a charge and how the payments are taken, the hospital must at a policy level decides how the prices are to be communicated to the customers. Since prices constitute an important input in the purchase of at least some of the medical services, creating information access to prices can enable customer to minimise some of the uncertainty in decision making. Not only do customers need to have some information on prices in advance, they also need to have information on how and when would they be required to pay. It is, therefore, advisable to institutionally decide, how much information on prices is to be communicated and how? Should rate lists for various services be on display or the rate cards be given to customers once they seek that information. Decision on how public should know pricing information needs to be institutionally taken and then clear unambiguous communication of prices needs to be managed.

To define the term in the most comprehensive way we can say value to the customer in the sum total of all perceived benefits minus the sum of all the perceived costs. Looking at this concept of value, it must be clear to you that the larger the gap between perceived total benefits and perceived total costs, the greater is the value that the customer would perceive in a given service. To enhance this perception of value in a given price category, therefore, as a provider of health services you may follow two alternative strategies or follow a combination of both. Value can be enhanced by increasing the benefits that you give to your customers or by rendering costs. On the side of costs, apart from the monetary costs, in services like health, other costs like cost of time (waiting in the reception, waiting for an appointment), cost of effort (in terms of access to location), cost on account of stress and sensory costs like fear are very relevant.

If the provider can manage to reduce some of these costs, he can alter the customers perception of value of his own service. What you must appreciate is that while comparing alternative providers of health services, customers use this perception of 'net' value i.e. the difference between perceived benefits and perceived costs, rather-than just the figure of monetary prices. You must, therefore, consider carefully the perceived benefits that are associated with your hospital services and the perceived costs that the customer has to bear, before arriving at a monetary price figure for your services.

Check your progress-2

- i. List the pricing objectives.
- ii. List the approaches that can be used to arrive at the final price.
- iii. What are pricing strategies when value to the customer is low price?
- iv. What are pricing strategies when consumers value perception includes augmented services and prestige?

18.8 LET US SUM UP

Pricing of health services poses several issues for decision makers in view of the sheer diversity of both the type of provider and the vast variety of consumer. In this unit you have learnt the role prices play in consumer valuation of health services, the kind of pricing objectives of the organisation. Organisations may seek to achieve while deciding upon their pricing policy and the various factors that are utilised to arrive at the pricing decisions, Issues requiring decisions while implementing the pricing policy have also been identified. The unit has covered the inputs that go into the pricing equation as well as the consumer use of price in his buying decision for the health services.

18.9 ANSWERS TO CHECK YOUR PROGRESS

Check your progress-1

- i. List the basic variables for decision making.

The three basic variables that are fundamental to any pricing decision are:

- How does my consumer define value for a given service?
 - What are my costs in providing that service?
 - How does my competitor price the same service?
- ii. Enlist strategies to minimize the various types of cost.
- Perceived costs of availing the service by the customer could also be reduced by:
- Reducing waiting time, reducing the time taken in giving test reports, ensuring all appointments are meticulously managed and kept.
 - Reducing the information search costs by providing required information readily and easily.
 - Facilitating access to services like facilities, accounts and amenities.
 - Reducing unnecessary physical effort that customers may be required to make to avail the facilities and services
 - Reducing levels of stress associated with a given treatment through information sharing, consultation and counselling.
 - Minimising sensory cost like noise, unwelcome sights and smells, offensive behaviour of support staff and so on through creation of attractive, pleasant visual atmosphere, noise reduction and training of personnel.

Check your progress-2

- i. List the pricing objectives.
- Pricing objectives may be:
- Revenue oriented
 - Operations oriented and
 - Patronage oriented.
- ii. List the approaches that can be used to arrive at the final price.
- The approaches that can be used to arrive at the final price are:
- Costs based pricing
 - Competition based pricing
 - Demand based pricing.
- iii. What are pricing strategies when value to the customer is low price?
- The technique that are followed in such conditions where the customer is acutely price conscious or defines value as being 'low prices' include the following.
- *Price Discounting*-Hospitals may carry discounted prices for vaccination for certain fixed periods, when such services are targeted to low income segments of the society, to overcome the apathy or enable purchase by large sections of consumers.
 - *Odd Pricing*-This is the pricing technique used to create a lower perception of the price and entails in pricing the service just

below the rounded rupee figure so that consumer feels he is paying a lower price.

- *Place Differentiates*-Locations partly because they define market segments indirectly also sometimes determine the prices that will get charged.
- *Quality Differentiates*-Bulk discounts such as corporate and organisations purchases are increasingly becoming common in health services as on the one hand organisations are making attractive medical reimbursements an integral part of their HR policies while on the other hand hospitals are becoming conscious to the necessity of having an assured and steady customer bases, the demand of which does not fluctuate widely.
- *Penetration Pricing*-Discussed earlier under the market penetration objectives in pricing thus pricing strategy is followed to introduce new services at low prices so that trial may be encouraged. The strategy is specially useful where the threat of potential competition is very high.

iv. What are pricing strategies when consumers value perception includes augmented services and prestige?

- *Value Pricing*-This strategy, based on the understanding of evaluation that the consumer will make on getting his money's worth, this pricing technique frequently used in the hospitality sector, entails in 'giving more for less'.
- *Complementary Pricing*-Sometimes called loss leader pricing — this pricing technique identifies complementarily between some of its services. While the basic service is priced low, the peripheral services can be priced to absorb some of the cost of the basic services and priced high.
- *Price Bundling*-A careful look at services provided by hospitals would show that patients utilize multiple services which go on to form a package. Not all patients would want to or need to utilize all associated services within a given package.

UNIT 19 HEALTH ECONOMICS

Structure

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19.0 OBJECTIVES

After studying this unit you should be able to:

- explain basic concepts of health economics and its application in health sector,
- discuss various techniques of economic evaluation;

- analyse demand, supply and price mechanism; and
- describe the various ways of resource generation and their allocation.

19.1 INTRODUCTION

In this unit you will learn about the basic concept of Health Economics, demand and supply mechanism and how they operate, some about the production function and briefly about how to generate resources, their allocation and utilization. The achievement of objective for health for all requires that resources are made available to health sector and are used efficiently. As the economic recession has exacerbated the problem of financing the health sector. The available funds are not always used in ways that will have maximum impact on the health of the people. This unit provides introduction to health economics for health professionals and presents basic economic concepts and their potential application in the field of health.

19.2 DEFINITION OF HEALTH ECONOMICS AND ITS APPLICATION IN HEALTH AND HOSPITAL PLANNING

19.2.1 Definition of Economics

To understand health economics and its contribution to health and hospital planning, the starting point is definition of health economics. Samuelson, the author of one of the mostly read text book of economics, defines economics as:

“The study of how people and society end up choosing, with or without use of money, to employ scarce productive resources that could have alternate uses, to produce various commodities and distribute them for consumption, now or in the future among various persons and groups in society.”

It analyses costs and benefits of improving patterns of resource allocation. Economics do not restrict itself to any particular activity, but it applies to all activities wherever there is scarcity and need for making choices. Therefore, it is the study of scarcity and choices.

Positive Economics It is about describing and analyzing decisions to do with scarcity and choice. It is concerned with what is or was, or will be.

Normative Economics: It makes judgment about the norms or standards to be applied. It determines what should be and not merely what is.

Health Economics: It can be defined as “application of the theories, concepts and techniques of economics to the health sector.”

It is concerned with:

- 1) allocation of resources among various health promoting activities.
- 2) the quantity of resources used in healthcare delivery.
- 3) organizing and funding of the health institutions.
- 4) efficiency with which the resources are allocated and used for health purposes
- 5) the effects of preventive, promotive, curative and rehabilitative health services on individuals and society.

Marketing and Health Economics 19.2.2 Contribution of Health Economics to Health planning

Health planning and health economics are both about choices. Health planning is choice between one future or another; choice between various ways of achieving that future. Health economics also relates to choose about how to optimize the use of resources within various activities. Economic considerations play a key role in all aspects of life such as industry, housing, agriculture, health etc. The major determinant of the country's health status is the level of economic development. Health policy of the country is strongly influenced by the economic considerations. Vice versa the health of the population can also influence the economic progress of the country. For example, to improve the social and economic welfare of people requires strategy which demands selection of those health programmes which improve health most efficiently such as health services, the provision of other health infrastructure such as water and sanitation, or action at improving nutrition etc. Health economics can help to evaluate such choices. Governments are actively seeking ways of containing costs, increasing efficiency and finding additional resources. Health economics is important as it helps to improve the allocation of resources, increase their efficiency, identify most cost-effective technologies and evaluate alternate sources of health finance.

Check your progress-1

- i. Define health economics.
- ii. List the concerns of health economics.

19.3 ECONOMIC DEVELOPMENT AND HEALTH

Economic development is a process having number of aspects. The three important aspects are economic, demographic and health.

19.3.1 Economic Development

Economic development is a broader concept than economic growth. When the economies grow in terms of national income and per capita income, certain structural changes accompany the process of growth. Conceptually the trends in income and the structural changes together constitute economic development. Income per head varies between nations and there is systematic relationship between income and other differences which include production patterns, consumption patterns, demography, health and health inputs between rich and poor countries. In poor countries, agriculture is more important, smaller population lives in towns, people spend relatively more on food and little on consumer durables.

19.3.2 Demographic Development

Economic development results in demographic transition. In the earlier part of the century, population has grown very slowly because high birth rates have been offset by high death rates. But with economic development; richest countries are again in a situation of low population growth because lower birth and death rates.

But in transition the death and birth rate do not move in step. Death rate falls first and in combination with high birth rates produce a period of very rapid population growth. Only when birth rate falls population will stabilize. This

may take decades. Therefore, the demographic transition has also its own momentum but is partly controllable. The speed at which birth rate follow the fall in death rate, is believed to depend on the fact that greater child survival causes parents to desire less children. Therefore, there is justification in making huge expenditure on population control programmes.

19.3.3 Health Development

It is a process by which population moves from low level of health to high level of health. The nature of these changes can be seen in case of infant death. At lower levels of health i.e., high infant mortality rate, most infant deaths are associated with communicable diseases like, diarrhea and respiratory conditions. At intermediate levels the common infectious diseases are replaced by range of conditions which require institutional care. At high levels of health (IMR 10 or less) infant deaths are reduced to a core of congenital conditions and expensive treatment and scientific interventions required. For children and young adults, the same basic pattern is found. However, in older age the gap between countries with low and high general level of health tends to narrow, e.g. infectious diseases are much less important relative to chronic and degenerative diseases such as cancer, stroke, diabetes, arthritis and mental conditions which are common to all countries.

Relationship between Economic, Demographic and Health Development

Economic development provides the extra resources for better nutrition, better housing and sanitation, health services and technology. This leads to lower mortality, which triggers demographic development. But it is not always that simple, for example, unless the demographic transition is completed, many of the gains from economic growth will be absorbed by high rate of population increase. Economic development promotes better health but better health, by reducing burdens of sickness and uncertainty, facilitates economic development. The relationship between economic, demographic and health development is a complicated system of interacting variables.

19.3.4 Production and Health

Economic development is usually accompanied by changes in pattern of production which interact with health of the population. Their interaction may have unfavorable effects on health and damage to health may be direct and concrete e.g. Bhopal Gas Tragedy in 1984 and Chernobyl disaster in 1986. In some cases, there is indirect effect, e.g. irrigation leads to increased agricultural output but creates a suitable environment for the spread of water borne disease such as schistosomiasis, the use of insecticides results in the emergence of resistant strains of malaria mosquito, making control of malaria more difficult.

In some cases, from the economic point of view the development is always potentially favorable to health and health care industry.

19.3.5 Distribution and Health

The proceeds of economic development are not necessarily equally distributed between persons and groups (e.g. resources for health services, income in general etc.). Strict equality is not possible for health services in

Marketing and Health Economics general. What is sought is equity i.e., fair shares for all obtained through the avoidance of inequalities which are not necessary or socially acceptable. Health services like many forms of production are subject to diminishing returns i.e., the more resources that are applied to given population, the less the increase in output (health) obtained from adding one more unit of output.

19.3.6 Consumption and Health

Patterns of consumption tend to vary in a predictable way with income. Income-Consumption relationship can be understood through the economic concept of elasticity of demand. The income elasticity for a particular category of consumption say health, can be defined as percentage change in expenditure on that item i.e., health, associated with a 1% change in the consumer's income. Income elasticity of more than one means an item of consumption takes increasing share of total expenditure as income increases. Medical care has an income elasticity of more than one.

At national level, poor country will spend 2-3% of national income on health care where as richest countries spend up to 10%.

19.4 ECONOMIES OF SCALE AND MONOPOLY

The relationship between input and output as the scale of production increases can be represented on a scale known as Economies of Scale or Scale of Economic efficiency. Economic efficiency deals with the least combination of the inputs, which will produce the desired output e.g. given the hospital fixed budget; output that can be maximized alternatively given a fixed quantity of services.

Economies of Scale has three forms:

- Constant returns to the scale.
- Increasing returns to the scale (Economies of Scale).
- Decreasing returns to the scale (Diseconomies of scale).

19.4.1 Constant Returns to Scale

When input increased in same proportion, it is possible for the output to increase at same rate, e.g. if the inputs in the immunization programme such as vaccines, publicity, immunization centres are increased by say 10% and the number of children vaccinated also increase by 10%, the programme is experiencing constant returns to the scale.

19.4.2 Increasing Returns to the Scale (Economies of Scale)

When output increases at a higher rate as compared to input i.e. for the example given above if the number of vaccinated children increase by 15% or more the programme is experiencing increasing returns to the scale. This is known as economies of scale. This phenomenon of the output rise at a higher than the rate of increase of input on account of larger volume of input is referred as economies of scale.

As the scale of production increases, managerial inefficiency and problems of large scale production are seen eventually leading to diseconomies of scale.

Economies of scale are important in planning of programmes, planning for hospitals, planning for facilities etc.

19.4.3 Decreasing Returns to the Scale

When output increases at a lower scale as compared to input i.e. the number of vaccinated children increase by say only 5%, the programme is experiencing decreasing returns to

the scale. This is known as Diseconomies of scale.

19.4.4 Monopoly

A monopoly exists when a firm or individual produces or provides and sells the entire output of same commodity or service, e.g., if only one pharmaceutical company is the manufacturer of a particular drug and sells the same in the market. There are some instances of economies of scale and tendency to natural monopoly in health care. Examples include hospitals and pharmaceutical firms. More often, the market is characterized by a limited degree of competition between two large producers (i.e. oligopoly). Price competition may be reduced in these circumstances by collusion. Competition, instead gets limited to non-price competition, for instance advertising of brand names.

Check your progress-2

- i. What is the relationship between Economic, Demographic and Health Development
- ii. List the Economies of Scale.
- iii. Define monopoly.

19.5 EXTERNALITIES (SPILL OVER EFFECTS)

Externalities exist when the level of consumption or production of some good or service by a consumer or firm has a direct effect on the level of welfare of another consumer or firm, as opposed to indirect effect through the price mechanism. Certain activities have spillover effects on other producers or consumers. These effects are called externalities. These effects may be desirable or undesirable. A very good example in the health field is the protection against disease provided to others when an individual is immunized. Another example is public health measures such as sewerage and drainage.

Externalities can be positive (beneficial), or negative (i.e. harmful). A particular type of externality is known as Public Good. These are commodities or services that, can be used, consumed or enjoyed by increasing number of people without diminishing the amount available to others, are available to everyone in the catchment area independent of the size or existence of payment, cannot be withheld from non-payers. Health care service characterized by the problem associated with public good is malaria control through environmental management (e.g. cleaning ponds). Here it is not possible to exclude non-payers from the benefits.

19.6 PRODUCTION FUNCTION

Production is the process of producing goods and services, which satisfy human wants. There are three components common to all production activities:

Marketing and Health Economics **Input:** Various resources such as manpower, equipment available for production capacity.

Process: Describes the transformation or productive technique which changes inputs into desired outputs.

Output: It is the end result of production.

In economics, the relationship between these components is described within the framework of production function. Production function is a way of representing, both qualitatively and quantitatively, the relationship that exists between inputs and outputs.

The relationship between input and output is represented by a production function of the type:

$$Q = f(L, K, T)$$

Q = output, L = labour, K = capital, T = the way L&K are combined.

It says that output (Q) is a function of combination of labour (L) and Capital (K), and the way in which they are combined (T)

Health care systems are not simple productive units. They produce many different types of outputs simultaneously and sometimes even unintentionally.

The way these outputs are produced is often poorly understood and it is often difficult to relate particular output to any one interaction or activity.

The Production Process

- A) The production process has following components:
- 1) Final outputs e.g. longer life, better health related quality of life.
 - 2) intermediate outputs e.g. reduction in symptoms, fewer cases of a disease, changes in a disease stage.
 - 3) Activities e.g. tests carried out. vaccinations given, surgical procedures performed.
 - 4) Inputs e.g. doctors, nurses, health promotion staff, buildings, equipment etc.
- B) The production process is concerned with turning 4 into 1.
- C) Theory of production The production theory enables us to raise issues like:
- What are the feasible ways of producing outputs?
 - What are the efficient ways of producing outputs?
 - What is the cheapest way of producing outputs?

The basic premise is that there are always many different ways of producing a final output, the differences may be of strategy such as:

Example 1: Reduction in deaths of Very Low Birth weight babies using surfactant replacement therapy or by treating mothers with corticosteroids.

Example 2: Reduction in malaria morbidity by nets, vector control or prophylaxis. Example 3 Reduction in TB by immunization or treatment

with antibiotics. Further within a basic strategy there may be a choice as such.

Example 4: Substitution of junior doctors for senior, substitution of nurses for junior doctors, substitution of alarmed monitors, for observation.

Example 5: Day's care for in patient surgery.

Example 6: Litiotripters for "keyhole" surgery, 'keyhole' surgery for open procedures.

Interventions may be quite different, but aim is for the same intermediate output (e.g. stone free gall bladder).

- D) Given the choice of ways of producing final outputs, the choice should be based on minimizing the cost of achieving any given output. The best method can change if the relative cost of inputs change (e.g. a wage rise for one category of staff, cheaper equipment), or when technology changes.
- E) Production can exhibit increasing, constant or decreasing returns to scale.

Increasing returns to scale are more common where it is possible to change the technology in use above a certain level, or where some necessary input is only partially used, e.g. since herd immunity becomes possible. There are also possibilities for scale economies in providing for services with large uncertainty (e.g. accident services).

Where services are very labour intensive, and the ratio of staff to patients is constant, then constant returns to scale are likely. Decreasing returns to scale are likely when access is costly, when management problems arise at larger outputs.

- F) Production is feasible whenever combinations of inputs can be turned into outputs.
- Production is efficient when it is not possible to reduce the use of any one input (holding other inputs constant) without a loss of output.
 - The cheapest efficient production will depend on prices of inputs.

19.7 EQUITY AND HEALTH

Equity in health implies that ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, that no one should be disadvantaged from achieving this potential, if it can be avoided.

Equity is, therefore, concerned with creating equal opportunities for health and with bringing health differentials down to the lowest level possible. Equity in health care is defined as:

- equal access to available care for equal need.
- equal utilization for equal need.
- equal quality of care for all.

Marketing and Health Economics Unequal access to health services may be due to:

- differentials in income, religion, race, sex, age or other factors not directly related to the need for care.
- high transport costs.
- inconvenient opening hours of health facilities.
- language and cultural barriers.
- resources and facilities being unevenly distributed around the country.
- resources spent on high technology medical services catering to only small segment of population.

Principles of Equity

- a) Horizontal equity
— equal treatment of equals
- b) Vertical equity
— unequal treatment of unequals

General Principles for Action

- 1) Equity policies should be concerned with improving living and working conditions such as safe housing, clean drinking water, controlling pollution etc.
- 2) Enable people to adopt healthier life styles.
- 3) Decentralize power and decision making, encouraging people to participate in decision making process.
- 4) Making high quality health care accessible to all.
- 5) Health impact assessment.
- 6) Research, monitoring and evaluation.

Is equity Achieved through Market

Markets do not necessarily result in equity, e.g. market exacerbates income inequalities by allocating goods or services according to the ability to pay thereby undermining the health of those who cannot afford health care. Therefore, some intervention is required to protect those who are most likely to be sick and least able to afford health care.

Check your progress-3

- i. Define Externalities.
- ii. Define Production. List its components.
- iii. What is Equity in health care
- iv. List the principles for Equity.

19.8 TECHNIQUES OF ECONOMIC EFFICIENCY

19.8.1 Economic Efficiency

In everyday use efficiency means value for money. For economists it has precise meaning. In health sector it means use of health resources in such a way that population is as healthy as possible. It deals with the least cost

combination that will produce desired output and in fixed budget how output can be maximized or given fixed quantity of services in a hospital how cost can be minimized. To achieve economic efficiency two criteria's must be met i.e. Effectiveness and Efficiency.

Effectiveness

It identifies the technical considerations for transforming inputs into outputs. There are many ways of achieving an output. Some of them may use inappropriate technologies or more resources than are necessary to produce a given level of output. Effectiveness is concerned with process of minimizing waste or effort when achieving an objective.

Efficiency

It takes into account the cost-of resources used in production and then compares them with the cost of the output produced. In other words, it relates to output per unit cost of the resources employed. Resources are being used effectively if a given output is produced at a minimum cost, or maximum output is produced at a fixed cost.

19.8.2 Operational Efficiency

Producing given output at minimum cost or maximize output for given cost.

19.8.3 Allocative Efficiency

Allocate resources between health and other objectives in relation to the value society places on health relative to other social objectives and the cost of achieving those objectives.

There are three conditions for achieving efficiency:

- i) Correct mix of outputs.
- ii) Technically efficient production process.
- iii) Least cost combination of inputs.

Techniques of economic evaluation concerns in achieving these three conditions.

Techniques of Economic Evaluation

Definition

“The quantitative analysis of the relative desirability to the whole community of investing in, alternative projects or programmes.”

The desirability is assessed in terms of both costs and consequences. Consequences is used as generic term for the beneficial results of the programme.

Essential Features of Economic Evaluation

- Desirability assessed through comparing costs and benefits (effects)
- Comparison of alternatives
- Concerns with costs and benefits to whole society (not just Government)

Forms of Economic Evaluation

There are many forms of economic evaluation but only those forms, which examine both costs and consequences for two or more alternatives can be described as economic evaluation studies. The various forms-of economic

Marketing and Health Economics evaluation are:

- 1) Cost Minimization Analysis.
- 2) Cost Effectiveness Analysis.
- 3) Cost Benefit Analysis.
- 4) Cost Utility Analysis.

Cost Minimization Analysis

It is based on prior epidemiological findings. The technique identifies the least cost intervention, e.g. if reduction of disability is achieved to the same degree by two interventions than which is the least cost intervention to achieve reduction of disability.

Cost Effectiveness Analysis

It does not question the objective. It finds out the best way of achieving a desired objective by comparing effects with costs. It evaluates either:

- Which of the number of possible interventions will achieve a given health objective for least cost, or
- Given a fixed budget, the intervention that maximizes the effectiveness of expenditure.

Results are expressed as costs per unit of output i.e. total cost of intervention divided by total health effect or as effect per monetary unit i.e. total health effect divided by total available resources.

Examples

- 1) Finding out cost effective methods for schistosomiasis control from amongst chemotherapy and water, chemotherapy alone, water supplies, or molluscicides.
- 2) To find out most cost effective test for cancer screening.

The problem of cost effectiveness analysis is that it cannot take account of multiple effects or consequences. It also cannot tell how large a programme should be.

Cost Benefit Analysis

It investigates whether the benefits of a project or programme exceeds costs. It involves identifying, measuring and valuing all relevant costs and benefits over an appropriate time period. In cost benefit analysis objectives can be questioned. It values both costs and benefits in monetary terms and is expressed by benefit / cost ratio i.e. benefits divided by costs. If the cost / benefit ratio is more than one, the project / programme is worthwhile, e.g. Cost benefit analysis for three programmes to eliminate severe vitamin A deficiency i.e. Public health intervention or monosodium glutamate fortification or mass dosage Vitamin A.

Cost Utility Analysis

It is a form of cost effectiveness analysis but it measures effects of the project or programme in terms of utilities. Like cost effectiveness analysis it can focus either on minimizing costs or maximizing effects. Results are expressed in terms of Quality Adjusted Life Years (QALY) or QALY's per monetary unit. It permits choice between wider range of options.

The most commonly used techniques of economic evaluation are cost benefit and cost effectiveness analysis.

Problems of Economic Evaluation

- Technical problem due to lack of information and the shortcomings of units of effect.
- “Efficient is not always sufficient” as the sole criterion for decision making.
- The economic evaluation techniques are used inappropriately to impose value judgments of specialists on the community as a whole.

Strengths of Economic Evaluation

- Methods for obtaining the best value for money from the use of available resources.
- It provides framework within which to consider the use of resources.
- They have important role to play in management issues, where the emphasis is on assessing how best to provide services rather than identification of priorities for investment, e.g. services should be provided in health facilities or homes.

Check your progress-4

- Define Effectiveness and Efficiency
- List the conditions for achieving efficiency.
- What are various forms of economic evaluation?
- Define Cost Minimization Analysis, Cost Effectiveness Analysis, Cost Benefit Analysis and Cost Utility Analysis.

19.9 DEMAND, SUPPLY, ELASTICITY OF DEMAND AND SUPPLY

In order to optimize use of scarce resources, an efficient information system is required to bring together the values of the alternative uses of resources (products) with their-production cost, and to co-ordinate the many decisions of consumers and producers. The price or exchange system, although imperfect, attempts this difficult task and plays a central role in economic analysis. It influences many health and health care programmes either directly or indirectly (e.g. through markets for personnel, drugs etc.). It is thus important to consider the workings of the price system, through an examination of demand and supply.

19.9.1 Demand

Demand is the desire for a good combined with the willingness and ability to get the desires fulfilled. In economics, the quantity of a particular good demanded is seen as a variable determined by a range of factors.

The demand function summarizes this relationship:

$$Q_d = f(P, RP, Y, T, \dots)$$

The quantity demanded (Q_d) is sum function of the price of the good (p) the prices of other related goods (RP); income (Y); and the organisational and

Marketing and Health Economics institutional structure of society and preferences and tastes of individuals (T) which will depend on many socio-economic and cultural factors. The demand function can represent the demand of an individual demanding a particular good in which case it is simply the sum of individual demands.

Demand Curve

The relationship between demand and price is often portrayed as a demand curve (Fig. 19.1). It illustrates how much would be demanded at each price. For most goods, more is bought as the price falls and the demand curve will slope downwards. In using a two-dimensional drawing of the demand curve, it is assumed that the other factors (RP, Y, T) remain constant. As far as health care is concerned there may be some exceptions to the downward slope e.g. addiction.

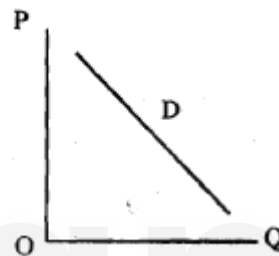


Fig 19.1: Demand Curve

19.9.2 Elasticity

The degree of responsiveness of one variable changes into another. If responsiveness is high, it is termed as elastic; if low, inelastic.

Elasticity of Demand

It is the responsiveness of demand to change in variables. It is reflected in the shape of demand curve.

Price Elasticity of Demand

Price elasticity of demand is measured by expressing the percentage change in quantity demanded (Qd) as a proportion of the percentage change in price (P).

$$\% \text{ change in } Q_d = E_d$$

$$\% \text{ change in } P$$

If the percentage change in Qd is greater than the percentage change in price, the demand for a good is elastic, $E_d > 1$. If the percentage change in quantity demanded changes by less than the percentage change in price ($E_d < 1$) the demand is inelastic. If the percentage change in price evokes a similar change in percentage quantity demanded then the demand is unitary elastic, ($E_d = 1$). Plasticity will depend upon the ease with which goods can be substituted for one another.

Income Elasticity of Demand

It measures the response in quantity demanded (Qd) which arises from changes in income (Y):

$$\% \text{ change in } Q_d$$

$$\% \text{ change in } Y$$

Cross-elasticity of Demand

It measures the response in quantity demanded of good A (Q_{da}) which arises from changes in the prices of other goods or services (P_b):

% change in Q_{da}

% change in P_b

It measures the degree of association amongst goods, i.e. whether they substitute or complement (need to be used with) each other. An example of substitute could be day care/in-patient care and example of complementary care could be diagnostic/curative services.

19.9.3 Supply

In economics, supply is used in a sense symmetrical with demand. The quantity of a good that producers offer for consumption is seen as determined by certain economic variables, of which the most important is the price at which the good can be offered.

Supply Function

it is the function relating to the quantity supplied to the variables likely to affect it.

$$Q_s = f(P, RP, C, RC, T, \dots)$$

The quantity supplied (Q_s) is some function of the price of the good (P), relative prices (RP), costs (C), relative costs (RC), and tastes (T) which will include socio-economic and cultural factors.

The supply curve (Fig. 19.2) shows the relationship between the price and the quantity supplied. It will normally slope upwards indicating that more will be supplied if prices rise. The notable exception is the supply of labour, which in some situations has a backward bending supply curve above a certain wage level.

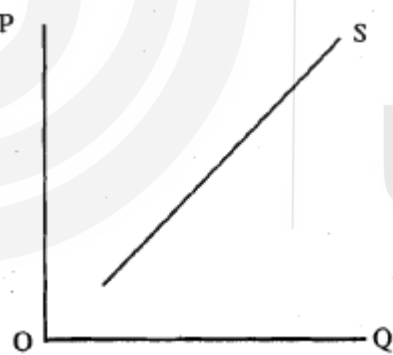


Fig. 19.2: Supply Curve

Elasticity of Supply

The ease with which quantity supplied will respond to changes in price is measured by the elasticity of supply, and it is reflected in the shape of the supply curve.

The elasticity or responsiveness of supply is roughly measured by pressing the percentage change in quantity supplied (Q_s) as a proportion of the percentage change in price (P):

% change in Q_s

% change in P

Like the elasticity of demand, supply is described as elastic where $E_s > 1$ and inelastic where $E_s < 1$. Elasticity will depend upon the ease

Marketing and Health Economics with which quantities of goods or services can be produced. In some cases, over an appreciable time span it may be difficult to obtain any more goods, irrespective of the price offered, e.g. agricultural crops or production where the scale of activities is fixed in the short term.

Equilibrium

Equilibrium in a market is achieved when supply equals demand (Fig. 19.3). Price and -quantity will adjust until the point is reached where buyers and sellers are content to exchange a given quantity (q_1) at a given price (P_1). The price so obtained will be the equilibrium price i.e. the value of the good of the consumer and producer is in equilibrium.

At P_2 suppliers will be willing to supply more than buyers are willing to purchase at that price. There will be excess supply and pressure to reduce prices. At P_3 buyers will be willing to buy more than suppliers are willing to offer and there will be pressure on prices to rise excess demand,

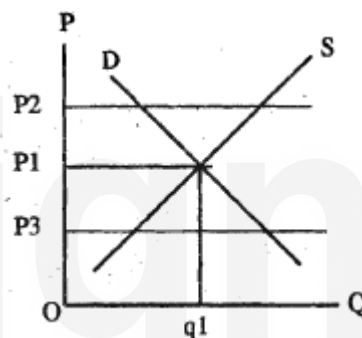


Fig. 19.3: Equal Supply and Demand

Supply, Demand and Policy

Supply and demand analysis can be used to consider policy changes such as the introduction of a tax on production and consumption of a good or subsidy on price or a policy of price controls.

Policy Instruments

Policy instruments used to intervene in the price system are:

- Fiscal policies — taxes or subsidies
- Control policies — limiting quantity (quotas) or price
- Regulations — setting out conditions for exchange — whether, when, where, by whom and of what standard
- Information/education, advertising to change values
- Changing property rights

These instruments could be used to correct market imperfections and the demand and supply of a good or services can be controlled.

Taxation

Tax is introduced to raise revenue or change behaviour. Fig. 19.4 shows the effect of a tax. Price has risen and quantity purchased has fallen. The extent of the rise or fall will depend upon the tax change and the relative elasticities of the supply and demand curves.

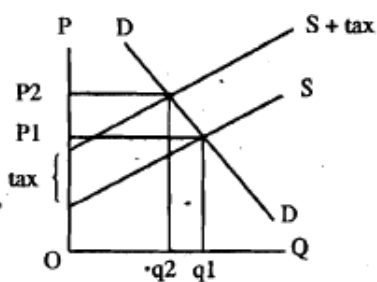


Fig. 19.4: Effect of Tax on Behaviour

Subsidy

Subsidy is introduced to protect the income of the producers, aid or protect an industry or to encourage use of a product by consumers who otherwise might be deterred by prices.

Fig. 19.5 shows the effect of a subsidy. Price has fallen and quantity purchased has risen. Again, the extent to which changes occur depend on the responsiveness of demand and supply.

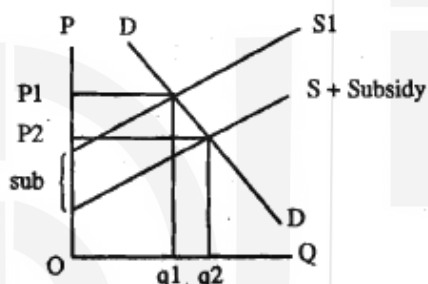


Fig. 19.5: Effect of Subsidy

Price Controls

Any Government can by decree fix the prices. The prices so fixed can be equal to, above or below the equilibrium price.

Fig. 19.6 shows the effects of the imposition of a price control (P2) above equilibrium price (P1). Price has risen and quantity demanded has fallen but excess supply (q1-q2) is available; unless this is managed there will be pressure on the market to bring down prices.

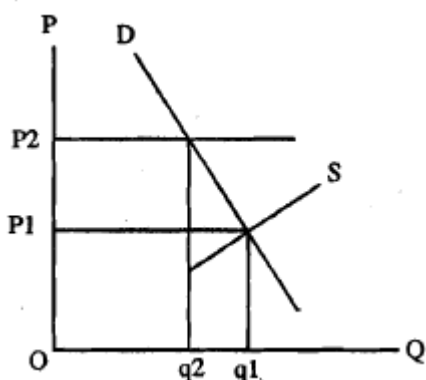


Fig. 19.6: Effect of Imposition of Price Control above equilibrium Price

Marketing and Health Economics Fig. 19.7 shows the effects of the imposition of a price Control (P_2) below equilibrium price (P_1). Price has fallen and quantity has fallen. At this price there will be excess demand ($q_1 - q_2$) and pressure to bid up the price unless some form of rationing is introduced.

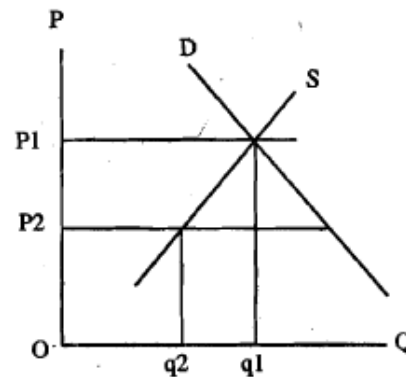


Fig. 19.7: Effect of Imposition of Price Control below equilibrium Price

Taxes and subsidies can be used to promote health. For example, taxes can be imposed on health-damaging substances (e.g. cigarettes) or on polluting industries, thus raising their price and reducing consumption/production. The extent of the reduction will depend on the relevant elasticities. Similarly, subsidies can be used to promote consumption or production by in effect lowering the price of health-promoting activities (e.g. zero-priced antenatal screening or dental and eye checks).

Externalities and Demand/Supply Analysis

Values, as expressed by the amount people are willing to pay, reflect only the private assessment of values and no account is taken of society's values. If there is a difference between the individual's and society's valuation of a good or service, externalities exist, i.e. factors are important that are external to those taking part in the transaction. You have already learnt about externalities earlier.

Demand or Consumption Externalities

If there are positive external benefits from the consumption of a good or service, society's demand curve will be to the right of the individual demand curve e.g. immunization, preventive medicine (Fig. 19.8); if there are negative external benefits from the consumption of a good or a service, society's demand curve will be to the left of the individual demand curve e.g. smoking and consumption of fat (Fig. 19.9). In either case, without intervention, over or under-consumption would occur.

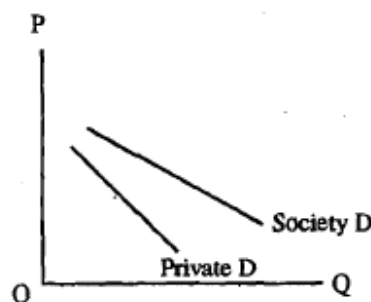


Fig. 19.8: positive external benefit

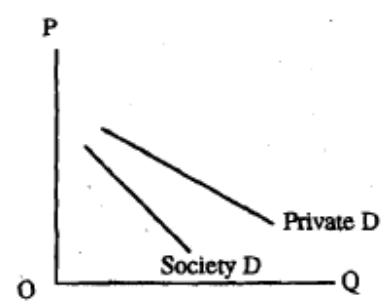


Fig. 19.9: Negative external benefit

A similar situation might occur on the supply side (Fig. 19.10). The costs which underlie the supply schedule only represent the private costs borne by the supplier. There may be costs borne by others as a result of the activity undertaken when producing goods e.g. river pollution, noise pollution or the use of scarce resources.

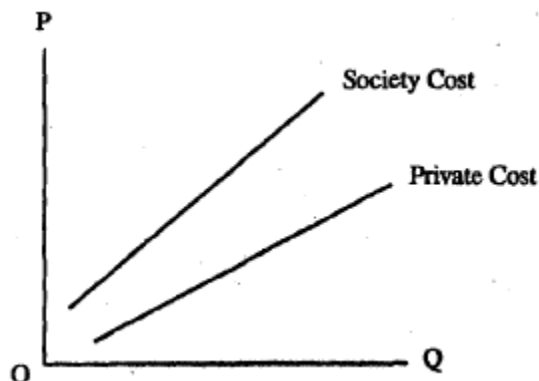


Fig. 19.10: Supply Externalities

Alternatively, the process may provide benefits in terms of amenities that can be used for other purposes and society's costs would then be below private costs.

Again, over- and under-consumption would occur if no intervention takes place. Intervention may take the form of taxes or subsidies of services, legislation to control output or price, or direct intervention in production and distribution of services.

19.10 HEALTH SECTOR FINANCING

Finance means provision of money as and when required. Health financing means raising of resources to pay for goods and services, financing of health care does affect the provision and utilization of health services. Financing of health care is vital not only because of scarcity of resources but also sustainability of resources and resource efficiency considerations. The lack of information about health sector financing has undermined appropriate decision making.

The studies of health sector finance have two main purposes, related to health sector problem: to investigate the efficiency of health sector and to provide information for financial planning. The information can be valuable for:

- Identifying who benefits from services?
- Identifying who gets what?
- Identifying current patterns of financing and encouraging discussion on alternative source of finance.
- Identifying and quantifying resource deficiency.
- Analysing resource deployment and identifying possibilities for re-deployment.

Marketing and Health Economics **Methods of Health Care Financing**

Health care financing can be through public or quasi-public sources and private sources.

Some of the methods of health care financing are enumerated below.

- a) Public and Quasi-public sources of finance:
 - i) General tax revenues
 - ii) Deficit financing
 - iii) Earmarked taxes
 - iv) Social insurance
 - v) Lotteries & betting
- b) Private source of finance:
 - i) Private health insurance
 - ii) Employer-financed scheme
 - iii) Charity and voluntary contributions
 - iv) Community financing
 - v) Direct household expenditure

Criteria for Evaluating different Methods of Financing Health Care.

- 1) **Efficiency:** Four aspects of overall efficiency with which financing mechanism raise and use finance are raising adequate sources, stability or reliability of financing sources, net use of the source and freedom and flexibility in the management of the funds.
- 2) **Equity:** To see the impact of equity of health care financing options it is important to ask 'who pays'? One way is that only those who benefit from the use health care (that is the sick or potentially sick) should pay for it — horizontal equity. The other way is that the distribution of the burden of paying for health care should reflect difference in ability to pay — vertical equity.
- 3) **Demand/utilisation:** Different financing methods have different effects on the level and type of service used. Some methods of payments influence consumer behaviour by the incentive to provide us to withhold or provide services.
- 4) **Supply/provision:** The method of financing affects the supply or provision of services. There may be bias with respect to the type of expenditure that they favour i.e. favouring curative rather than preventive services.
- 5) **Displacement effects-:** Instead of generating additional resources new financing methods may displace funding from other sources, e.g. foreign assistance may displace Govt. funding for health care.

Check your progress-5

- i. What is Demand? List the factors on which affect demand function.
- ii. Define Elasticity, Elasticity of Demand, Price Elasticity of Demand, Income Elasticity of Demand, supply, Elasticity of Supply, Equilibrium

- iii. How health financing is useful?
- iv. What are the *Methods of Health Care Financing*?

19.11 LET US SUM UP

In this unit you have learnt about the basic concepts of economics and its application in the health sector. You have also learnt about the economic development and its relationship with demographic and health development. Further you have learnt about three forms of economies of scale and monopoly. You also learnt about production function which is the process of producing goods and services that satisfy human wants and have three components namely input, process and output. You have also learnt about equity in health which aims at creating equal opportunity for health and bringing health differentials down to the lowest possible level. You also learnt about the techniques of economic evaluation which include economic efficiency, operational efficiency and allocative efficiency.

You also learnt about four forms of economic evaluation namely cost Minimisation analysis, cost effectiveness analysis, cost benefit analysis and cost utility analysis. Subsequently you have learnt the concept of demand, supply and elasticity and their application in policy instruments, taxation, subsidy and price control. Towards the end of the unit, you have learnt about health sector financing which is not vital only because of security of resources but also sustainability of resources and resource efficiency consideration. This also includes various methods of health care financing including public and private sources of financing.

19.12 ANSWERS TO CHECK YOUR PROGRESS

Check your progress-1

- i. Define health economics.
It can be defined as “application of the theories, concepts and techniques of economics to the health sector.”
- ii. List the concerns of health economics.
It is concerned with:
 - allocation of resources among various health promoting activities.
 - the quantity of resources used in healthcare delivery.
 - organizing and funding of the health institutions.
 - efficiency with which the resources are allocated and used for health purposes
 - the effects of preventive, promotive, curative and rehabilitative health services on individuals and society.

Check your progress-2

- i. What is the relationship between Economic, Demographic and Health Development
Economic development provides the extra resources for better nutrition, better housing and sanitation, health services and technology. This leads to lower mortality, which triggers demographic development.

- ii. List the Economies of Scale.
It has three forms:
- Constant returns to the scale.
 - Increasing returns to the scale (Economics of Scale).
 - Decreasing returns to the scale (Diseconomies of scale).

- iii. Define monopoly.

A monopoly exists when a firm or individual produces or provides and sells the entire output of same commodity or service, e.g., if only one pharmaceutical company is the manufacturer of a particular drug and sells the same in the market.

Check your progress-3

- i. Define Externalities.

Externalities exist when the level of consumption or production of some good or service by a consumer or firm has a direct effect on the level of welfare of another consumer or firm, as opposed to indirect effect through the price mechanism.

- ii. Define Production. List its components.

Production is the process of producing goods and services, which satisfy human wants.

There are three components common to all production activities:

- **Input:** Various resources such as manpower, equipment available for production capacity.
- **Process:** Describes the transformation or productive technique which changes inputs into desired outputs.
- **Output:** It is the end result of production.

- iii. What is Equity in health care

Equity in health care is defined as:

- equal access to available care for equal need.
- equal utilization for equal need.
- equal quality of care for all.

- iv. List the principles for Equity.

General Principles are:

- Equity policies should be concerned with improving living and working conditions such as safe housing, clean drinking water, controlling pollution etc.
- Enable people to adopt healthier life styles.
- Decentralize power and decision making, encouraging people to participate in decision making process.
- Making high quality health care accessible to all.
- Health impact assessment.
- Research, monitoring and evaluation.

Check your progress-4

- i. Define Effectiveness and Efficiency

- Effectiveness-It identifies the technical considerations for transforming inputs into outputs. There are many ways of

achieving an output. Effectiveness is concerned with process of minimizing waste or effort when achieving an objective.

- Efficiency-It takes into account the cost-of resources used in production and then compares them with the cost of the output produced. In other words, it relates to output per unit cost of the resources employed. Resources are being used effectively if a given output is produced at a minimum cost, or maximum output is produced at a fixed cost.

ii. List the conditions for achieving efficiency.

There are three conditions for achieving efficiency:

- Correct mix of outputs.
- Technically efficient production process.
- Least cost combination of inputs.

iii. What are various forms of economic evaluation?

The various forms-of economic evaluation are:

- Cost Minimization Analysis.
- Cost Effectiveness Analysis.
- Cost Benefit Analysis.
- Cost Utility Analysis.

iv. Define Cost Minimization Analysis, Cost Effectiveness Analysis, Cost Benefit Analysis and Cost Utility Analysis.

- Cost Minimization Analysis-It is based on prior epidemiological findings. The technique identifies the least cost intervention, e.g. if reduction of disability is achieved to the same degree by two interventions than which is the least cost intervention to achieve reduction of disability.
- Cost Effectiveness Analysis-It does not question the objective. It finds out the best way of achieving a desired objective by comparing effects with costs.
- Cost Benefit Analysis-It investigates whether the benefits of a project or programme exceeds costs. It involves identifying, measuring and valuing all relevant costs and benefits over an appropriate time period. In cost benefit analysis objectives can be questioned.
- Cost Utility Analysis-It is a form of cost effectiveness analysis but it measures effects of the project or programme in terms of utilities.

Check your progress-5

i. What is Demand? List the factors on which affect demand function.

Demand is the desire for a good combined with the willingness and ability to get the desires fulfilled. The quantity demanded (Qd) is sum function of the price of the good (p) the prices of other related goods (RP); income (Y); and the organisational and institutional structure of society and preferences and tastes of individuals (T) which will depend on many socio-economic and cultural factors.

Marketing and Health Economics ii.

Define Elasticity, Elasticity of Demand, Price Elasticity of Demand, Income Elasticity of Demand, supply, Elasticity of Supply, Equilibrium

- Elasticity is the degree of responsiveness of one variable changes into another. If responsiveness is high, it is termed as elastic; if low, inelastic.
- Elasticity of Demand -It is the responsiveness of demand to change in variables. It is reflected in the shape of demand curve.
- Price Elasticity of Demand-Price elasticity of demand is measured by expressing the percentage change in quantity demanded (Qd) as a proportion of the percentage change in price (P).
- Income Elasticity of Demand-It measures the response in quantity demanded (Qd) which arises from changes in income (Y).
- Supply , in economics, is used in a sense symmetrical with demand. The quantity of a good that producers offer for consumption is seen as determined by certain economic variables, of which the most important is the price at which the good can be offered.
- Elasticity of Supply-The ease with which quantity supplied will respond to changes in price is measured by the elasticity of supply, and it is reflected in the shape of the supply curve.
- Equilibrium-Equilibrium in a market is achieved when supply equals demand

iii. How health financing is useful?

The studies of health sector finance have two main purposes, related to health sector problem: to investigate the efficiency of health sector and to provide information for financial planning. The information can be valuable for:

- Identifying who benefits from services?
- Identifying who gets what?
- Identifying current patterns of financing and encouraging discussion on alternative source of finance.
- Identifying and quantifying resource deficiency.
- Analysing resource deployment and identifying possibilities for re-deployment.

iv. What are the *Methods of Health Care Financing*?

Health care financing can be through public or quasi-public sources and private sources.

Some of the methods of health care financing are enumerated below.

- *Public and Quasi-public sources of finance:* General tax revenues, Deficit financing, Earmarked taxes, Social insurance

Private source of finance Private health insurance, Employer-financed scheme, Charity