Economics of Health and Healthcare
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Lecture -18
Costing in a Hospital System

Now you know like cost mechanism in hospital is really challenging. So, when we talk about the cost mechanism in hospital we know with the modern day hospitals with equipped with fantastic technologies we to you know best of the art scientific systems and all this. So, it is really challenging that and all these departments in the hospital have different requirements. They require they use different machineries.

The you know the charges of different to the fees of the elimination of different doctors or different the cost of the medicines are different. The number of hospital stay are different now the production or the cost in a hospital is measured these days' average length of stay in a hospital That is again to mention this is especially when we discuss about the IPD inpatient department where the hospitalization is required. OPD outpatient department hospitalization is not required.

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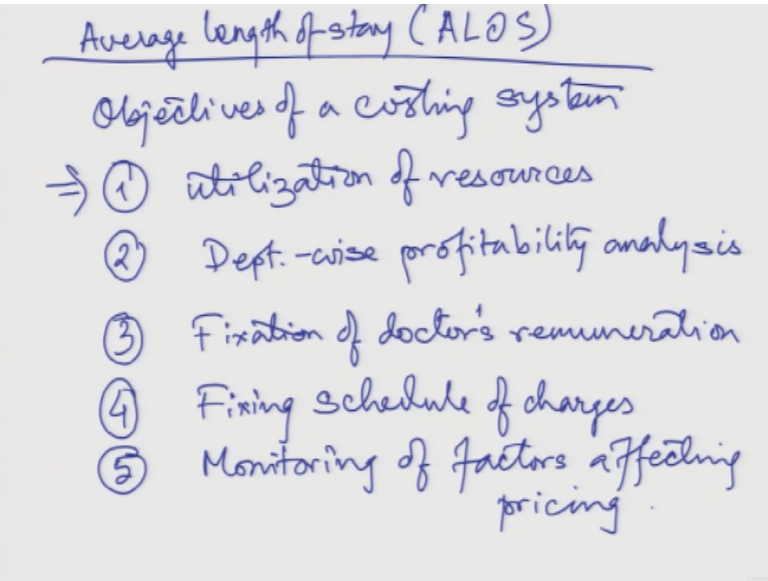

So, the average length of stay is utilized length of stay that is staying in the hospital in the bed ALOS is utilized to understand that how many you know what is the production of this hospital for that particular patient. That is the length of stay so when it is that complicated I will discuss about few basic cost structures or cost mechanisms in the hospital. But when we are looking at the measurement of this average length of stay.

Or a cost associated with the length of stay or treating a particular patient having a particular disease or eventually when I talk about hospital holistically we do not talk about a particular disease. It is everything together and there comes the challenge when we talk about everything together. The objectives of our costing system talks about number 1 utilization of resources utilization of resources.

As you know the number of average length of stay in oncology department may be much more than in you know say orthopedic department or the cardiology and also of ophthalmology. So, every particular department has varying or highly varying length of stay or utilization of different resources. The ophthalmology department or the neurological department have different utilization of MRI or x rays from these oncology or say orthopedics or say pediatric department.

Yeah, the next is to where we talked about profitability analyst is department wise department wise profitability analysis Yes and then when we do department specific profitability analysis we need to understand in which department how much you know how much of the system being utilized. What is the patient foot fall? what is the length of stay? what is the basic treatments generally sought for all these things?

Number 3 is fixation of doctor's remuneration often very challenging and you do it based on the reputation of the doctor the business a doctor is bringing. Because nowadays in a corporate hospital doctors are consultant and you know doctors are seen as a profit making agent. And then the doctor's remuneration is highly dependent upon the profit they are able to generate. Therefore, fixation of doctor's remuneration is dependent upon.

And it also you know falls under an objective of the costing about estimation in a hospital. The 4 is fixing schedule of charges This is for each different services how much charge you how much do you charge to the patients for MRI for x Ray for one day stay in the hospital in the inpatient department for utilization of OT. This is based on what kind of technology you have what kind of services you are providing.

What kinds of buildings? do you have whether you what kind of TV you are providing, how many patients are ceiling of one particular room and all these things. You know what kind of bed you have given to the patient, so everything determines the fixation of charges. Now this bed the TV the general equipment do not vary patient to patient from the surgery to surgery for the department of department.

What varies again the treatment specific utilization, so everything needs to be together when you bill when you estimate a cost and based on that cost you estimate how much you are going to charge the patient. Number five is monitoring of factors affecting pricing monitoring of factors affecting pricing you know I once our very senior hospital administrator told me a story that in a hospital it will was being observed.

That in a particular bed whoever is coming is choking to death. You know they found that the oxygen cylinder the ventilator everything is fine. Every equipment is working fine but what used to happen they never could figure out for a longer duration of time for a considerable period of time. Eventually when they figured out the reason was whenever the maid used to come to clean that hospital that that particular room or near that particular bed.

She used to remove that ventilator plug point from the charge and the patient died. So, these are the or you know there is an; there are nurses who are just given charge to look at how words are monitor around that where they are is any you know mistakes or any lacunae in terms of the facility know if there is any leakage or if there is water on the floor. If there is any seepage if there is a probability of a short circuit.

So, she just looks around, so these are the monitoring of factors affecting pricing because if they are phalluses on this part the cost will increase and then the cost of a death is tremendous in a hospital. They cannot afford that because it does not only spoil their businesses spoiled their reputation for now over a longer period of time. So, they cannot afford that eventually in a hospital.

We have when we do the costing we take into account both the direct cost and indirect cost. So, the direct cost is basically the costs associated to the treatment. And then the indirect cost are those which are like say administrative costs the building cost the you know ambulance costs which are basically you know similar for all these patients. So, this direct cost and indirect cost when taken together we call it.

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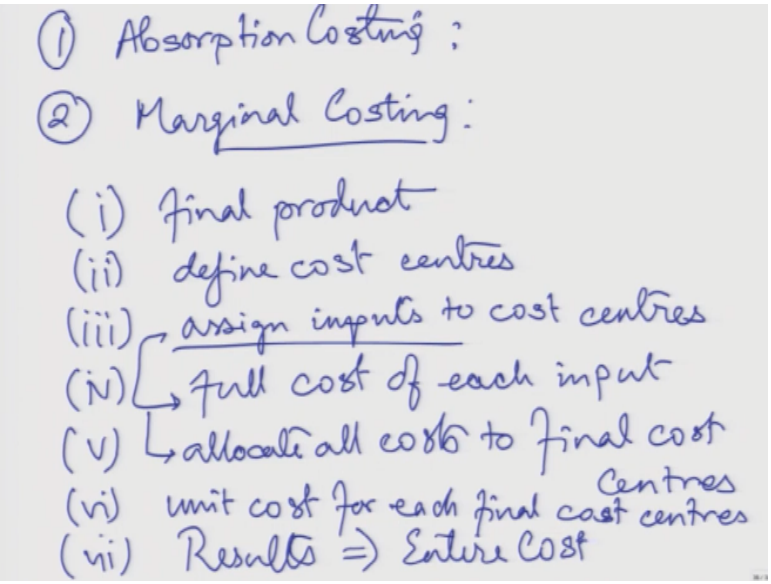

1 is absorption costing while costing and absorption costing which is also known as account cost. This absorption costing takes into account both fixed cost as well as variable cost and the second is marginal costing which takes skill of this variable cost on leap because fixed costs remaining same the variable cost with 1 unit of extra patient. What is my cost increasing? So we have to take both these absorption costing and marginal costing.

And you know when we are doing this absorption costing and the marginal cost in whichever make mechanism we are following we must understand that we are taking into account all these

factors which are affecting costs in a hospital. So, indirect costs whichever factor needs to come and in indirect costs whichever factors need to come and also the expenses the stationary expenses basic general expenses.

We also need to account for them like stationary expenses building capital value the range the electricity the equipment and machinery the charges we take into take care of all of this you know. And therefore when we take into account all of this then we estimate the cost for every patient for a particular taking a particular treatment. Otherwise we are certainly ending up in a miscalculation or misappropriation of problem of a hospital costs.

Now when we talk about this hospital cost we need to keep in mind apart from these 5 points that utilization of resources department wise profitability and fixation of doctor so and so forth. We also need to find that which is the final product so define the final product. What is my final product? Yes, and because we are accountable to the patients we have to say because of the this particular treatment.

Or this particular outcome this particular process. we are charging you this so what is the final product? Why we are doing following a particular process for a particular treatment. We are accountable we are answerable to them. Number 2 is defined cost centers that which are different cost elements which are different cost centers which is raising my cost, or which is contributing to my total cost.

The third is assigned inputs to cost centers assign input so which are the hospital inputs for that for those particular cost centers. And how those inputs are contributing to the total cost average cost or even marginal cost for those particular cost centers. Maybe for OPD my cost centers are different than my operation theater. They are different from my ICU they are different from my say an hour and his generation camp or an outreach campaign done by the hospital.

Say some eye checkup or some diabetic checkup some cardiovascular or see some basic health checkup done in a particular camp. Say Apollo or Narayana Hrudayalaya once decided to do these camps in one of their clinics. Yes, and if they can why they do this that is the primary one

thing is that to reach the patient and the another thing is that because they have multiple selling points for multiple products.

They do not only these days give you know this treatment they are not only treating the patients but also selling medicines. Also having diagnostic centers also having small clinics NHS started having small centers where they are treating that cardiology patients very small centers you know 5 bedded 10 bedded 15 bedded hospitals where they are they are taking the emergency cases.

They have all the facilities needed for a cardiovascular patient or a patient with heart ailments in the emergency. So, they do not have to rush to that you know the far outweigh the NH main center. They are having this small unit where they are they can treat the patients and that are doctor they come here to do the surgeries even. So, the 4 so this cost centers different cost centers have differential different inputs.

And we need to understand which are those inputs and how they are playing a role in that. The 4 th can be the 4 th can be a full cost of each input. After identifying these inputs, we have to understand that full cost of each input that for each input how much cost am incurring. Can I you know reduce that cost with keeping the input same improving the technology or can I do a better mix of these inputs.

So, I need to understand that what is different cost contribution by each particular input and which can also be a contribution margin per unit right? That the variable cost by particular unit for a particular factors of production and its different from the selling cost and its shall not go down then I am losing my profit my contribution margins shall not go down by a large margin. The next one is allocate all costs to final cost centers.

So, all costs allocate all costs to final cost centers that means all input cost is coming to the final cost centers. After I assign the inputs I get the full cost after I get the full cost I allocate all costs to the final cost centers and then I can compute that unit got cost which is the average customer

marginal cost the unit cost for each final costs since or, so I will compute the unit cost for each final cost centers.

Yes, that is ICU may have different services ICU may have different inputs and after understanding cost contribution by each input for each cases I will estimate you know the total cost for this cost center. And then for this ICU 1 ICU 2 ICU 3 I can probably or in NICU SICU special intensive care unit, neonatal intensive care unit. I can you know estimate my total intensive care unit cost.

And then the final one is then you get the results of your entire cost estimation. And this is how you do a cost estimation for a particular hospital services. And this is eventually is not a very easy one you can download a document which is given by a which is a manual for hospital managers analysis of I will just write it down.

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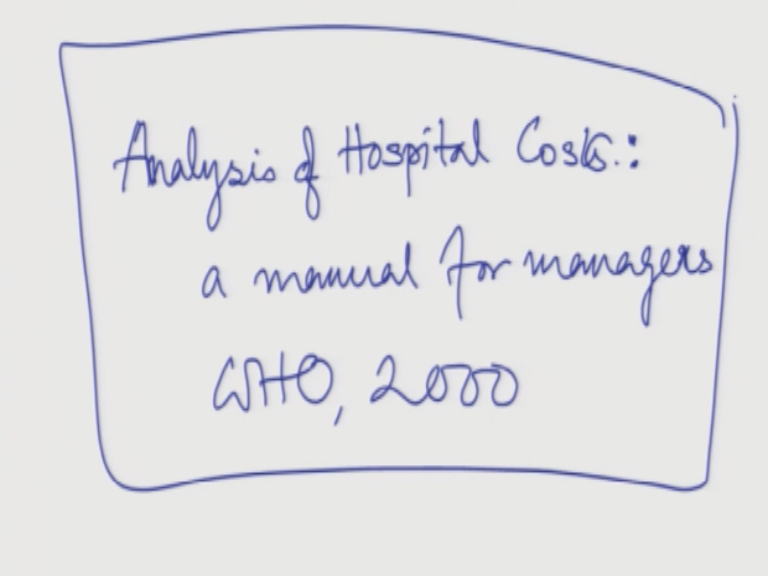

It is known as analysis of hospital costs analysis of hospital costs a manual for managers. Yeah and this is a document published by world health organization in 2000. You can go through this and you can get several articles by you NCBI or you know by BMG who have estimated or tried to estimate the cost functions in hospital. Thank you very much.