ALLOCATION OF BUDGET IN HOSPITAL MANAGEMENT

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ABSTRACT- The solution of the work is obtained by using QM for windows and result are discussed. The purpose of this work is to develop and analyse GP model to allocate budget for various categories. The model can be extended and applied in other fields where the same condition occurs.

1 INTRODUCTION-

What do you do each year when budget time comes around? Do you leave things to the department's management team? Do you look at last year's budget and add a small percentage close to the rate of inflation plus another small percentage which is halfway between hopefulness and expectation? If you adopt either of these tactics, then you may be missing an opportunity to influence what your department does throughout the year. There is growing interest in the issue of cost and value in healthcare professional education – whereby funders, providers, and consumers of education are keen to ensure that maximum effectiveness, benefits, and/or utility is accrued from investments. At a time of economic recession when all budgets are coming under pressure, such interest is only likely to increase. By getting more involved in the management of budgets, you will have the ability to convert what could be merely an academic interest in cost and value into practical activities and subsequent results. In this article, we offer guidance to help you plan and manage

departmental or project budgets in healthcare professional education. The guidance is aimed not just at budget holders but at all those who are responsible for the delivery of some aspect of education.

Think About Your Department's Goals and Strategy

The purpose of healthcare professional education is to educate learners to a high standard and keep them up to date – not to make a profit. Hence, while budgeting is important, you should always remember that it is a means of achieving an end and not a goal in itself. The primary purpose of your department should be reflected in its goals and strategy. Hence, it is important to get involved in the development of strategy and the definition of goals.[1] The strategy might be to be the best school in the UK, or to produce graduates who are interested in primary care and who will stay in the region, or to produce an unparalleled research output in healthcare professional education. When the strategy has been decided on, then the budget will need to be modeled to help you meet your goals.

Get Involved in Budget Planning

The earlier that you get involved in budgetary planning, the more likely you will be able to influence outcomes. Planning will involve deciding upon strategic goals, reviewing options, and deciding upon the best one. A strategic goal might be that your school should make available for its learners the best possible E-learning resources that are available. Next, you will need to review options. Should you create a set of new resources from scratch? Or should you license in existing resources? Or join a consortium that shares resources? Each option will have associated benefits, risks, and costs. Deciding upon, the best option will involve weighing up the benefits, risks, and costs of each and choosing what is likely to be best for your department and your students.

Communicate the Budget Plan to the Team

Most departments of education will be responsible for carrying out a range of different and yet interrelated tasks. For example, a department might be responsible

for curriculum design, delivery of education, assessment strategy, and receiving and acting on feedback from students. However, these are unlikely to be discrete activities – there probably will be significant overlap between assessment and learning and between feedback and curriculum design.[2] The budget must be able to capture this complexity and must be communicated to the team in a format that they will understand. Communication in this circumstance is essential and the bigger the organization, the more continuous and effective the communication must be. All team members must understand what the goals are, what budgetary allocations have been made, and how their activities might overlap with activities in other teams.

Monitor Adherence to the Planned Budget

If there is going to be an over- or under-spend of the budget, then the time to know about it is as soon as possible. A small over-spend on say simulation equipment in the first quarter may turn into a massive over-spend by the end of the financial year. Corrective action taken into the first quarter may well be effective; action taken in the last quarter is unlikely to have much effect. The difference between actual spend and planned spend is called the variance.[3] Under-spending and saving money may be attractive but beware – if you under-spend in 1 year, your budget is likely to be cut by the variance in the next year. This may not be best practice – but it is the reality in many private and public sector organizations. E-learning is a good case study to evaluate and as you can measure spend and also evaluate usage and outcomes on a continuous basis.

Evaluate the Outcomes, Learn from Them, and Start Planning Again

At the end of the financial year, it will be time to review the results from the last year, consider any lessons learned and plan for the next year. It is best to do this as a team and to share lessons learned widely.[6] If you have monitored results closely throughout the year, then there should be fewer surprises at the end of the

year that planning and managing the budget should be a continuous process and not an annual one.

Consider What Your Budget Cycle Should be

In the above examples, the budget cycles are annual but that may not necessarily be the best way to run things. Some simple short-term projects may be started and completed in 6 months – in which case the budgetary plan for the project should only span these 6 months. However, other projects may be more long-term – for example, there may be a plan to set up a satellite of a nursing school in another country. This is likely to be 10 years project and the budgetary planning should reflect this. Most budgetary cycles are likely to lie between these 2 extremes – but it is important not to be constrained by an annual cycle if that does not fit with your plans.

2 DATA OF THE PROBLEM

The study was carried out in Ganga Ram Hospital located in Delhi. The related information is given in the following tables-

Table-1

Districts	Suspects examined per lakh population	Annualised case detection rate (against >135/lac)	Annualised new sputum positive case detection rate (against >60/ lac)		Sputum conversion rate new cases (against >90.0%)	Cure rate (new cases) (against 85.0%)
BJRM Chest Clinic	238	277	93	98%	95%	87%
BSA Chest Clinic	**140**	246	73	76%	96%	90%
CD Chest Clinic	174	191	33	**35%**	100%	89%
DDU Chest Clinic	155	250	74	78%	**91%**	88%
GTB Chest Clinic	392	343	100	106%	**89%**	**83%**
Gulabi Bagh	159	189	55	**58%**	92%	89%
Hedgewar C Clinic	222	261	75	79%	**88%**	**79%**
Jhandewalan	229	291	73	77%	**85%**	**81%**
Karawal Nagar	197	389	116	122%	**86%**	88%
Kingsway	233	362	98	103%	**88%**	85%
LN Chest Clinic	277	219	66	70%	**85%**	89%

LRS	194	187	54	**57%**	91%	88%
MNCH Chest Clinic	154	378	108	114%	93%	88%
Moti Nagar	298	316	85	89%	97%	**82%**
Narela	270	294	79	83%	**88%**	90%
NDMC	478	213	61	**64%**	96%	91%
Nehru Nagar	261	363	116	122%	90%	83%
Patparganj	326	403	124	131%	92%	91%
RK Mission	247	334	115	121%	94%	87%
RTRM Chest Clinic	228	200	66	69%	93%	89%
SGM Chest Clinic	383	468	111	117%	92%	89%
Shahadra	390	478	148	156%	**85%**	**82%**
SPM Marg	210	215	83	87%	92%	**80%**
SPMH Chest Clinic	235	416	120	126%	93%	**82%**
Total	**244**	**295**	**87**	**91%**	**91%**	**86%**

Table-2

Year	Total slide examined	Total Malaria cases	Total Pf cases	Deaths
2006	940300	928	36	0
2007	668761	182	2	0
2008	593882	253	0	0
2009 (Upto Mar.)	85506	2	0	0

Table-3

	Activity	Amount Proposed	Amount approved	Remarks
1	Establishment of IDD Cell	10.20	7.50	
2	Establishment of IDD	7.90	4.50	There is no fund

	Monitoring Lab			provision for neonatal screening, honorarium to attendant and transport expenses under NIDDCP The UT Administration may carry out activities as per the fund allocation of GOI
3	Health Education and Publicity	2.00	2.00	
4	IDD surveys	2.00	1.00	
5	Other activities	7.90	-	
	Total	30.00	15.00	

Table-4

NATIONAL RURAL HEALTH MISSION							
Delhi							
	Total MFP Approvals			**3272.64**	**5847.68**	**9873.01**	
RoP Approvals for Various Years in Rs. Lakh							
S.No	**Initiative**	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**Remarks**
		Released	Approved	Approved	Approved	Approved	
ASHAs							
1	ASHA				1471.53	1904.03	
	TOTAL				**1471.53**	**1904.03**	
	Infrastructure related matters						
2	Infrastructure				50.00		
3	Upgrading to IPHS					7.1	
4	Strengthening of Tertiary care facility					25	
5	Strengthening of Training Infrastructure (State & District Trg Venues & Support Staff)			149.08			
6	Strengthening of Maternity Homes.			404.2	614.61	1132.6	
7	Strengthening of CDMOs Office (Manpower/Equipment/Space)			100.00	50	104.11	
8	Primary health facilities (of MCD / DGD / NDMC.) MOs/ANMs.					802.05	

3 GOAL PROGRAMMING MODEL

The general GP Model is formulated as follows

Minimize $Z = \sum \sum W_{ki}(d_i^- - d_i^+)$

Subject to constraints

where $x_j, d_i^-, d_i^+ = non\ gegative\ variables$

$$Z = P_1 \sum_{i=1}^{4} \left(d_i^- + d_i^+\right) + P_2 \sum_{i=5}^{8} \left(d_i^- + d_i^+\right) + P_3 \sum_{i=9}^{12} \left(d_i^- + d_i^+\right) + P_4 \sum_{i=13}^{16} \left(d_i^- + d_i^+\right)$$
$$+ P_5 \sum_{i=17}^{22} \left(d_i^- + d_i^+\right) + P_6\left(d_{23}^- + d_{23}^+\right) + P_7\left(d_{24}^- + d_{24}^+\right)$$
$$+ P_8\left(d_{25}^- + d_{25}^+\right) + P_9\left(d_{26}^- + d_{26}^+\right) + P_{10}\left(d_{27}^- + d_{27}^+\right)$$

4 RESULT AND ANALYSIS

The model contains 19 variables and 27 constraints. The model was solved by QM for WINDOWS.Table4 shows the goal achievement. Table -5 shows the values of deviational variables. All the goals except four goals namely P_7, P_8 , P_9, P_{10} are achieved. We can observe that the negative deviational variable d_{24}^- = 910, this means the total budget in Hospital can be decreased 910 (Rs. 000). The goal P_8 is not achieved, because the negative deviational variable d_{25}^- = 695 .This indicates that the total budget in Emergency Ward can be decreased 695 (Rs. 000).The goal P_9 is not achieved, because the positive deviational variable d_{26}^+ = 531.This shows that the total budget in hospital can be increased 531 (Rs. 000). Finally, the total budget goal P_{10} also not achieved, because the negative deviational variable d_{27}^- = 2064. That is the total budget can be decreased 2064 (Rs. 000).

Table 5

Goal Attainment	Achieved/ Not achieved
P_1	Achieved
P_2	Not Achieved
P_3	Not Achieved
P_4	Not Achieved
P_5	Not Achieved
P_6	Not Achieved
P_7	Achieved
P_8	Achieved
P_9	Achieved
P_{10}	Achieved

5. CONCLUSION

The purpose of this work is to develop and analyse GP model to allocate budget for various categories. The model can be extended and applied in other fields where the same condition occurs. What do you do each year when budget time comes around? Do you leave things to the department's management team? Do you look at last year's budget and add a small percentage close to the rate of inflation plus another small percentage which is halfway between hopefulness and expectation? If you adopt either of these tactics, then you may be missing an opportunity to influence what your department does throughout the year. There is growing interest in the issue of cost and value in healthcare professional education – whereby funders, providers, and consumers of education are keen to ensure that maximum effectiveness, benefits, and/or utility is accrued from investments. The guidance is aimed not just at budget holders but at all those who are responsible for the delivery of some aspect of education.

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