

RESULTS OF DRUG USE FOR MEDICAL INSURANCE AT 105 MILITARY HOSPITAL FROM 2015 TO 2017

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SUMMARY

Objectives: To do a research on drug use results for health insurance subjects at 105 Military Hospital from 2015 to 2017. Research methods: Retrospective study. Results and conclusion: Building unscientific plans, its value in 2017 was 2 times higher than in 2016; there was no continuity and logicity in the preparation of bidding documents for 3 years from 2015 to 2017; bidding organizations can only buy 75 - 88% of the plan; bidding time in 2015 was 74 days, in 2016 it was 130 days and in 2017, it took 185 days. Bidding results in 2015 and 2016 exceeded 50%, in 2017 only about 50%. Conclusion: Preparing plans and bidding documents that are not scientific; the winning result is low (75 - 88%); it takes long time to hold a bidding. Expenditure for drug use is not reasonable.

** Keywords: Results of drug use; Medical insurance; 105 Military Hospital.*

INTRODUCTION

Health insurance (HI) is a form of insurance applied in the field of health care, non profit, organized by the state and the objects have the responsibility to participate in accordance with the provisions of law on HI [1]. Thus, HI is a preeminent policy, taking human health care as a center on a highly community-based organization to share risks when unfortunately suffering from illness and disease. The universal HI (UHI) model is an important policy of countries around the world [2]. Currently, UHI has been successfully implemented in some developed countries

[3]. In Vietnam, the policy of UHI is mentioned by Politburo Resolution No. 46/NQ-TW [4]. The roadmap for implementing UHI is to target by 2020, 80% of the population will participate in HI.

105 Military Hospital is a military hospital with the task of examining and treating for many subjects (military, policy, HI, medical services). In recent years, the Hospital has focused on improving the technical and professional qualifications to meet the new tasks of the Party and the Government that are implementing UHI. Therefore, this research contributes to improve the quality of health care for the army and the people.

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SUBJECTS AND METHODS

1. Subjects.

Data on drug use, medical records and patient questionnaires.

2. Methods.

Retrospective description combined with ABC/VEN matrix analysis.

RESULTS

1. Structure of drug use according to ABC analysis.

The structure of drug list for 3 years (2015 - 2017) was shown in table 1 and table 2.

Table 1: Structure of drug list according to ABC analysis.

Group \ Year	2015		2016		2017	
	Number	%	Number	%	Number	%
A	60	16.85	55	15.54	74	17.05
B	54	15.17	55	15.54	78	17.97
C	242	67.98	244	68.93	282	64.98
Total	356	100	354	100	434	100

In 2015, drugs of group A accounted for 16.85%, drugs of group B accounted for 15.17% and drugs of group C had the largest number accounting for 67.98%. These rates were quite similar in the next 2 years.

The ratio of the value corresponding to the quantity was shown in table 2.

Table 2: Structure of drug value according to ABC analysis.

Unit: million VND

Group \ Year	2015		2016		2017	
	Value	%	Value	%	Value	%
A	12.360	75.18	15.966	75.16	24.193	75.14
B	2.483	15.10	3.218	15.15	4.839	15.03
C	1.598	9.72	2.060	9.70	3.166	9.83
Total	16.441	100	21.244	100	32.198	100

- Group A: In order to achieve about 75% of the budget, in 2015, it needed 16.85% of the number, whereas this rate in 2016 was 15.54% and it was 17.05% in 2017.

- With a rate of about 15% of the budget of group B in 2015, the rate of drugs was 15.17%, it was 15.54% in 2016 and it was 17.97% in 2017.

- Group C: In order to achieve about 10% of the budget, in 2015 it needed 67.98% of the number of drugs, 68.93% in 2016 and 64.98% in 2017.

2. Structure of drug use according to VEN analysis.

Table 3: Structure of drug list according to VEN analysis.

Year Group	2015		2016		2017	
	Number	%	Number	%	Number	%
V	83	23.31	94	26.55	98	23.04
E	209	58.71	209	59.04	278	64.06
N	64	17.98	51	14.41	56	12.90
Total	356	100	354	100	434	100

- Proportion of group V drugs used in 3 years was not equal over the years: in 2015 this rate was 23.31%, it was 26.55% in 2016 and 23.04% in 2017.

- The rate of drug use of group E was the highest and gradually increased over the years from 58.71% in 2015 to 64.06% in 2017. Meanwhile, the rate of using group N drugs was the lowest and there was gradual decrease over 3 years (from 17.98% in 2015 to 12.90% in 2017).

Table 4: Structure of drug value according to VEN analysis.

Unit: million VND

Year Group	2015		2016		2017	
	Value	%	Value	%	Value	%
V	2.036	12.38	5.405	25.44	7.162	22.24
E	11.042	67.16	12.666	59.62	20.964	65.11
N	3.363	20.45	3.173	14.94	4.072	12.65
Total	16.441	100	21.244	100	32.198	100

- The rate of drug use by value of group V, E and N increased and decreased unevenly over the years. In particular, the rate of group E utilization was still the highest (accounting for 67.16% in 2015, 59.62% in 2016 and 65.11% in 2017).

- The rate of drug use of group N (group of essential drugs) was still quite high, which in 2015 was higher than the group of essential drugs V (accounting for 20.45%) and gradually decreased in the remaining 2 years (the rate corresponding with the years 2016 and 2017 was 14.94% and 12.65%). Some drugs of group N: glucosamine 250 mg, ginkgo biloba 40 mg, alphachymotrypsine...

- Proportion of drug use according to VEN analysis between quantity and value: The rate of drugs use belonging to group E both the number of items and corresponding values was much higher than the remaining 2 groups (group V and group N). The rate of use between the number of items and the corresponding value of group V and group N increased, decreased unevenly over 3 years.

3. Analyze the use of drugs according to the ABC/VEN matrix.

Table 5: Structure of drug list according to the ABC/VEN matrix.

Group \ Year	2015		2016		2017		Mean value
	Number	%	Number	%	Number	%	
I	136	38.20	136	38.42	158	36.41	37.41 ± 1.01%
II	181	50.84	187	52.82	246	56.68	54.75 ± 1.93%
III	39	10.96	31	8.76	30	6.91	7.83 ± 0.92%
Total	356	100	354	100	434	100	100%

The ratio of the amount used in the highest 3 years was group II and the lowest was group III, in which:

- Group I was the most important group of drugs containing the most necessary drugs (group V) or drugs with the most value for using the most budget (group A), need special attention to account for an average rate of 37.41 ± 1.01%.

- Group II (important group) accounted for an average rate of 54.75 ± 1.93%.

- Group III (less important group) accounted for an average rate of 7.83 ± 0.92%.

Table 6: Structure of drug value by ABC/VEN matrix.

Unit: million VND

Group \ Year	2015		2016		2017		Mean value
	Value	%	Value	%	Value	%	
I	13.424	81.65	17.333	81.59	26.198	81.37	81.54 ± 0.12%
II	2.695	16.39	3.637	17.12	5.630	17.49	17.00 ± 0.46%
III	322	1.96	274	1.29	370	1.15	1.47 ± 0.35%
Total	16.441	100	21.244	100	32.198	100	100%

The rate of drug use value for groups decreased over 3 years from group I to group III. The average use for group I was 81.54 ± 0.12%, group II: 17.00 ± 0.46% and group III: 1.47 ± 0.35%.

Proportion of quantity and use value: Although the number of group II was higher than the other two groups, the use value of group I was the highest, especially in group III (low value drugs, high number of use - group C and non-essential - group N), this rate was low (1.47%).

Table 7: Group A drug results in ABC/VEN matrix by value (million VND).

Group \ Year	2015		2016		2017	
	Value	%	Value	%	Value	%
AV	972	7.86	4.305	26.52	5.374	21.74
AE	8.740	70.71	9.516	58.62	16.397	66.35
AN	2.648	21.42	2.412	14.86	2.943	11.91
Total	12.360	100	16.133	100	24.714	100

Large-cost drugs focus mainly on essential drugs (group E). Non-essential medicine group with high value also accounted for a high proportion over the years: in 2015 it accounted for 21.42% (higher than the AV group of 7.86%), it accounted for 14.86% in 2016 and it was present in 11.91% in 2017. This shows that non-essential drugs are abused in hospitals.

Thus, it is necessary to have the attention on the hospital's drug and treatment committee to be included in the annual shopping list of the hospital in order to bring efficiency in drug use, save the budget for drug procurement for HI, limiting abuse of non-essential drugs and drugs of great value.

4. Survey results of some drug use indicators.

Through a survey on drug use indicators in 2007 at 105 Military Hospital, following the guidance of Circular No.21/TT-BYT, the results were shown below:

- About the average coordination amount in a single application:

+ 601 inpatient medical records were included in the study. The average combination result in one application: 5.011 ± 2.197 (drug/single). Of which, the maximum number of combination drugs/single was 12 and the number of combination drugs was at least 1.0/single.

- About adverse interactions in drug coordination:

Interactive assessment according to Food and Drug Administration (FDA) was shown below:

Table 8: Pairs of adverse interactions in drug use coordination.

Number	Interaction level	Pair number	%	Number of medical records
1	Severity	6	12.2%	6
2	Medium	38	77.6%	118
3	Low	5	10.2%	8
Total		49	100%	132

The number of adverse medical records was quite high: 132/601 patients had adverse interaction accounting for 21.9%. There were 49 interactive couples out of a total of 132 interactive medical records (because one medical record may have one or more interactive pairs).

Interaction occurs at 3 levels:

+ The severity: 6 pairs accounted for 12.2%, occurred in some pairs: spironolacton - perindopril; ciprofloxacin - methylprednisolon; ciprofloxacin - theophylin; ketorolac - diclofenac...

+ Moderate (medium level): Common pair of interactions, with 38 pairs, accounting for 77.6%: cefotaxim - gentamicin; diazepam - perindopril; furosemid - ketorolac...

+ Light level: 10.2%, occurred in some pairs: aspirin - spironolacton; atropine - nitroglycerin...

CONCLUSION

Structure of using drugs according to ABC analysis: Group A needed about 16 - 17% of the amount to achieve about 75% of the budget. Group B needed about 15 - 18% of the amount to reach about 15% of the budget. Group C: Only about 10% of the budget achieved 65 - 69% of the amount.

Structure of drug use according to VEN analysis: The rate of using drugs group V: from 23 to 27% in terms of use, accounting for 12 - 25% of the fund. The rate of using drugs group E: from 59 - 64% of the amount, accounting for 60 - 67% of the fund. The rate of drugs use in group N: from 13 - 18% of the amount, accounting for 13 - 20% of the expenditure.

Analysis of drug use according to the ABC/VEN matrix: Group I: the average number of medicines: $37.4 \pm 1.0\%$;

corresponding to $81.5 \pm 0.1\%$ of the fund. Group II: average drug quantity: $54.75 \pm 1.93\%$; representing $17.0 \pm 0.5\%$ of the fund. Group III: average drug quantity: $7.83 \pm 0.92\%$. Group A analysis in the ABC/VEN matrix by use value: AE group accounted for the highest proportion (59 - 71%) and AV group accounted for the lowest rate of 12 - 21%.

Some drug use indicators: The average combined amount in one application: 5.01 ± 2.19 (drug/single). Combined drug count was 12 drugs/single. There were 21.9% of projects that have adverse interactions and interaction occurred at 3 levels (severity, medium and low).

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