

Survey on the process of selecting and developing a drug formulary at Da Nang Psychiatric Hospital in 2021

Khảo sát quy trình lựa chọn và xây dựng danh mục thuốc tại Bệnh viện Tâm thần Đà Nẵng năm 2021

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Abstract

Background and Objectives: Choosing the appropriate drug has been playing an important role in the treatment in hospitals. The survey of the process of selecting and developing a list of drugs aims to point out inadequacies, thereby taking timely solutions to increase the rational use of drugs. The objective of the study was to survey the process of selecting and developing a drug formulary of Da Nang Psychiatric Hospital (DNPH). **Methods:** Cross-sectional description through retrospective review of reports, books, invoices and documents related to drugs used at DNPH in 2021. **Results:** In 2021, DNPH conducts drug bidding through Da Nang Department of Health. Other forms that the hospital does not apply are open bidding, limited bidding, appointment of contractors, competitive offers and self-execution. The list of drugs used at Danang Psychiatric Hospital in 2021 has 112 items. Chemical medications accounted for 94,64% of the category, with single-component chemical pharmaceuticals accounting for 85,71% and generic drugs accounting for 95,57%. Antipsychotic medications and pharmaceuticals acting on the nervous system are the most often used drugs, accounting for 20,54% of all drugs. Oral medications account for approximately 68,8% of total drug products, with injectable and infusion pharmaceuticals accounting for the remaining 20,8%. The hospital uses a large percentage of locally made medicines (65,2%). The hospital's medication list contains 5 special control medicines (4,46%). **Conclusion:** The Drug and Therapeutic Council at DNPH plays an important role in formulating the formulary. In 2021, the hospital only conducts drug bidding through the Da Nang Department of Health. API quantity used at DNPH in 2021 is 112, corresponding to 296 drugs. Antipsychotics and drugs acting on the nervous system were used the most (20,54%). Oral drugs, single-component drugs, generic drugs, and domestic drugs account for a large proportion of the hospital drug list in 2021.

Keywords: Drug formulary; Da Nang Psychiatric hospital; 2021

Tóm tắt

Đặt vấn đề: Lựa chọn thuốc sử dụng hợp lý đã và đang đóng vai trò quan trọng trong công tác điều trị tại các bệnh viện. Việc khảo sát quy trình lựa chọn và xây dựng danh mục thuốc nhằm chỉ ra những bất cập, từ đó có giải pháp kịp thời

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tăng cường sử dụng thuốc hợp lý. Mục tiêu của nghiên cứu là khảo sát quy trình lựa chọn và xây dựng danh mục thuốc của Bệnh viện Tâm thần Đà Nẵng. Phương pháp nghiên cứu: Mô tả cắt ngang thông qua hỏi cứu các báo cáo, sổ sách, hóa đơn chứng từ liên quan đến thuốc đã sử dụng tại Bệnh viện Tâm thần Đà Nẵng năm 2021. Kết quả: Năm 2021, Bệnh viện Tâm thần Đà Nẵng thực hiện đấu thầu thuốc thông qua Sở Y tế Đà Nẵng. Các hình thức khác mà bệnh viện không áp dụng là đấu thầu rộng rãi, đấu thầu hạn chế, chỉ định thầu, chào hàng cạnh tranh và tự thực hiện. Danh mục thuốc được sử dụng tại bệnh viện có 296 khoản mục thuốc. Trong đó, thuốc hóa dược chiếm 94,64%, chủ yếu là các thuốc đơn thành phần (85,71%) và các thuốc generic (95,57%). Nhóm thuốc được sử dụng nhiều nhất là nhóm thuốc chống rối loạn tâm thần và thuốc tác động lên hệ thần kinh (20,54%). Thuốc đường uống chiếm khoảng 68,8% trong khi thuốc đường tiêm, tiêm truyền chiếm 20,8%. Thuốc sản xuất trong nước được bệnh viện sử dụng khá cao (65,2%). Thuốc kiểm soát đặc biệt trong danh mục thuốc của bệnh viện gồm 5 thuốc, chiếm 4,46%, còn lại là thuốc thường. Kết luận: Hội đồng Thuốc và Điều trị đóng vai trò quan trọng trong việc xây dựng danh mục thuốc tại Bệnh viện Tâm thần Đà Nẵng. Năm 2021, bệnh viện chỉ thực hiện đấu thầu thuốc qua Sở Y tế Đà Nẵng. Số lượng hoạt chất được sử dụng tại DNPH năm 2021 là 112, tương ứng với 296 loại thuốc. Thuốc chống loạn thần và thuốc tác động lên hệ thần kinh được sử dụng nhiều nhất (20,54%). Thuốc uống, thuốc đơn thành phần, thuốc generic và thuốc sản xuất trong nước chiếm tỷ trọng lớn trong danh mục thuốc bệnh viện năm 2021.

Từ khóa: Danh mục thuốc; Bệnh viện Tâm thần Đà Nẵng; 2021.

1. Background

Drug expenditure usually accounts for about 30-40% of the health budget of many countries [7]. However, inappropriate drug use and ineffective drug supply activities leading to increased treatment costs, increased drug resistance, and reduced medical efficiency [7]. In Vietnam, the cost of drugs used in hospitals usually accounts for about 60% of the budget [5]. Reasonable selection and use of drugs saves costs, ensures safety, effectiveness and brings many other benefits to patients.

The outbreak of the Covid-19 pandemic has had a significant impact on changing the disease pattern in the world, as well as in Vietnam. This has led to remarkable changes in the number of patients, number of hospital bed-days, and consequently the changes of hospital expenditure compared to those of previous years, including DNPH. DNPH is the leading class II psychiatric hospital in the Central region and one of the three compulsory medical treatment facilities nationwide. Therefore, development and maintenance a suitable drug formulary at the hospital to enhance the selection and use of drugs reasonably, safely, and effectively is one of the issues of great concern and focus.

2. Methods

A retrospective cross-sectional study was carried out, on reviewing reports, archived

documents, invoices and documents related to drugs used at Danang Psychiatric Hospital in 2021.

Drug list was analyzed using several basic criteria as follows:

- Drugs of chemical active chemical pharmaceutical ingredient (API);
- Traditional drugs, herbal drugs;
- Domestic drugs;
- Imported drugs;
- Single-API drugs; multi-API;
- Administration route: Injection, infusion, oral, other routes (for external use, nasal spray, eye drops, anal placement);
- Drugs subject to special control: addictive, psychotropic, drug precursors, toxic drugs, drugs banned from use in a number of fields;
- Drugs by name of API;
- Drugs by trade names.

Data collection: Data was collected from available documents related to the list of drugs used at the DNPH in 2021:

- Drug formulary.
- Monetary value of drug purchase.
- Report on drug use in 2021 of the Department of Pharmacy-DNPH.

Data was analyzed, processed, presented in tables and charts through Microsoft Excel 2021 software.

3. Result and discussion

The process of selecting and developing a drug list at DNPH is described in Figure 3.1:

3.1. Drug selection, drug formulary establishment and maintenance

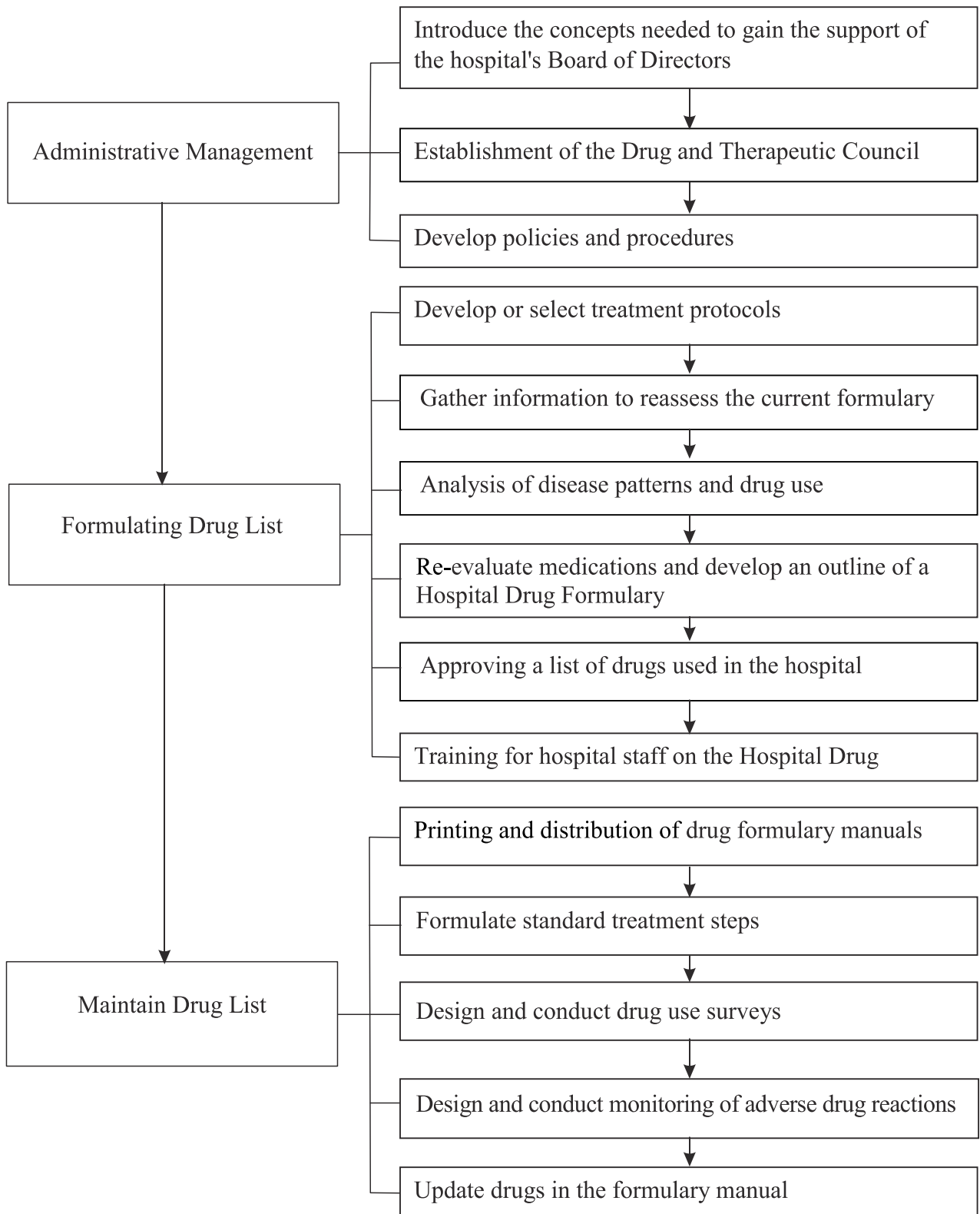


Figure 3.1. Process of drug selection and formulation at DNPH

The process of selecting, developing, and implementing a drug list at DNPH is run by the Drug and Therapeutic Council. The hospital bids for drugs by selecting drugs, building a drug list, and submitting the estimated quantity through the Da Nang Department of Health for bidding. The formation of the drug formulary is based on the ABC analysis along with the analysis of the drug groups used in the previous year, the demand from the departments, the main drug categories used in medical examination and treatment facilities and the list

of drugs covered by the fund. Health insurance is paid according to Circular 30/2018/TT-BYT.

3.2. Analysis of the drug formulary at DNPH in 2021

In 2021, DNPH used 112 active ingredients, corresponding to 296 drugs (including 290 modern medicines and 6 traditional/herbal medicines). The structure of the list of drugs classified by therapeutic group follows the guidance of Circular No.30/2018/TT-BYT, specifically as follows:

Table 3.1. Structure of drug list used at DNPH in 2021 by therapeutic group

No.	Therapeutic group	Quantity	Proportion (%)
1	Antipsychotic drugs and drugs acting on the nervous system	23	20,54
2	Gastrointestinal drugs	13	11,61
3	Solutions correcting water, electrolyte, and acid-base disturbances	9	8,04
4	Anti-parasitic drugs, anti-infectives	9	8,04
5	Non-steroidal anti-inflammatory, antipyretic, analgesic	6	5,36
6	Traditional medicine, herbal medicine	6	5,36
7	Antiallergic drugs and drugs used in anaphylaxis	5	4,46
8	Antiepileptic and anticonvulsant drugs	5	4,46
9	Cardiovascular drugs	5	4,46
10	Minerals and Vitamins	4	3,57
11	Hormones and drugs that affect the endocrine system	3	2,68
12	Anesthesia, anesthetic, muscle relaxant, muscle relaxant	4	3,57
13	Disinfectant and disinfectant	3	2,68
14	Medicines to treat eye, ear, nose and throat diseases	2	1,79
15	Migraine pain medication	2	1,79
16	Drugs affecting the blood	2	1,79
17	Addictive finished drugs, psychotropic finished drugs, and precursor products	5	4,46
18	Anti-Parkinson's Drugs	1	0,89
19	Other drugs	5	4,46
Total		112	100,00

The drug formulary used at the hospital can be divided into 19 groups. In which, antipsychotic drugs and drugs acting on the nervous system accounted for the highest rate (21,7%), followed by gastrointestinal drugs (11,61%), drugs to treat parasites, anti-infective and solution to regulate water, electrolytes, acid-base balance (8,04%).

With the characteristic of being a leading specialized hospital in psychiatry. It can be seen that the structure of the drug formulary is consistent with the disease model at the unit.

With mainly patients with neuropsychiatric disorders, the regular use of antipsychotic drugs often brings undesirable effects on the digestive system. At the same time, this group of subjects is also often vulnerable to physical exhaustion due to hostile behaviors.

Ratio of domestic and imported drugs: The use of domestic or imported drugs reflects the viewpoint on drug selection of the The Drug and Treatment Council. Drug formulary used at DNPH in 2021, by origin is shown in the Table 3.2:

Table 3.2. Structure of drug list by origin in 2021

Drug group	Quantity	Proportion (%)
Domestic drugs	73	65,20
Imported drugs	39	34,80
Total	112	100,00

The results show that the percentage of domestically produced drugs used at DNPH in 2021 is twice as high as that of foreign manufactured drugs (65,2% versus 34,8%). This result is generally consistent with the results at Thanh Hoa Psychiatric Hospital in 2015 (62,03%) and Nghe An Mental Hospital in 2012 (66,7%) [7].

This shows that the hospital has prioritized the selection and use of domestically produced drugs

according to the Government's project to launch "Vietnamese people give priority to using Vietnamese products" [1]. The use of domestic drugs may help reduce treatment costs and increase flexibility in drug supply activities.

Proportion of brand-name drugs and generic drugs: Of the 112 items on the list of drugs, 106 are modern medicines. Statistics on the percentage of brand-name drugs and generic drugs are presented in Table 3.3 as follows:

Table 3.3. Proportion of brand-name drugs and generic drugs in DNPH in 2021

Drug group	Quantity	Proportion (%)
Brand-name drugs	10	9,43
Generic drugs	96	90,57
Total	106	100,00

Table 3.3 shows that the number of brand-name drugs used in hospitals is relatively small with 10 items. The active ingredients that the hospital uses are mostly those that the domestic pharmaceutical industry has met. It shows that when building the drug list, the hospital's e-commerce and training policy has focused on

using domestically produced drugs to save on treatment and medical costs for patients.

Structure of the list of drugs used by route of administration: The results of the study on the structure of modern drugs by route of administration are shown in Figure 3.1

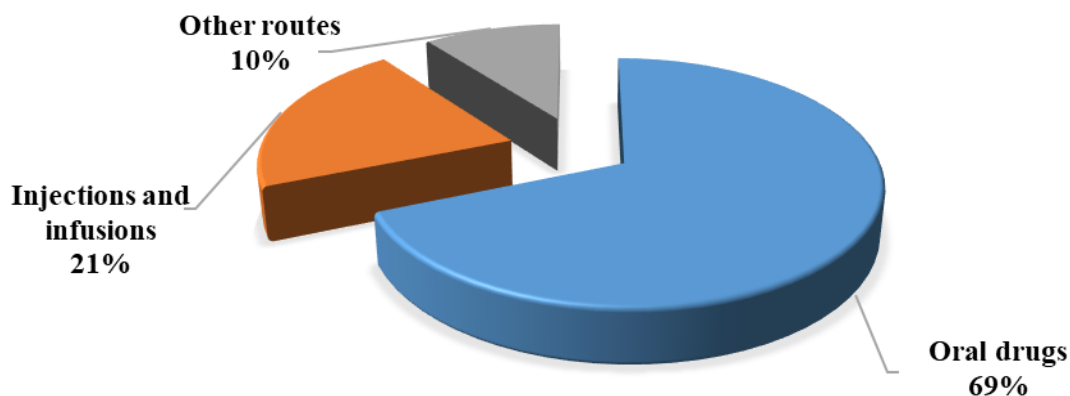


Figure 3.1. Structure of the list of drugs used by route of administration at DNPH in 2021

In 2021, the group of oral drugs used accounted for the highest proportion than that of other routes of administration. Of which, oral drugs accounted for nearly 68,8%, 3 times higher than injections and infusions (20,8%) and approximately 7 times higher than the remaining (other routes).

The specificity of DNPH is to treat a group of patients with mental disorders. The disease has a chronic nature, so the use of multiple oral drugs is a reasonable choice. However, as one of the three mandatory treatment facilities, the hospital often receives cases of severe mental

disorders, the use of oral drugs is sometimes very difficult because patients are difficult to comply with. treatment action. Therefore, the use of intravenous drugs, infusion is necessary. On the other hand, the use of injections and infusions requires qualified medical staff and the accompanying consumables (cotton, needles) are expensive, so it still needs to be carefully considered when using.

Drug structure by active ingredient: The structure of single- and multi-API drugs in the drug formulary of DNPH in 2021 is shown in the following Table 3.4:

Table 3.4. Structure of drugs by active ingredients in drugs at DNPH in 2021

Drug group		Quantity	Proportion (%)
Single API	Modern medicine	96	85,71
Multi API		10	8,93
		Traditional medicine, herbal medicine	6
Total		112	100,00

According to the recommendations of the World Health Organization, multi-API drugs should only be used when they have superior advantages in terms of effectiveness, safety and effect compared to single-API drugs. In addition, according to Circulars 21/2013/TT-BYT and 19/2018/TT-BYT of the Ministry of

Health, priority is given to the selection of drugs in the form of single substances.

Drug formulary used in 2021 of DNPH includes 96 single-component drugs, accounting for 85,71%. This rate is equivalent to the research results at Thanh Hoa Psychiatric Hospital in 2015 (multi-component drugs accounted for 18,35%, single-component drugs

accounted for 81,65%). Thus, in 2021, the hospital has prioritized the use of single-component drugs over multi-component drugs. This shows that the hospital has well implemented the recommendations of WHO and the Ministry of Health on the use of single-drug drugs in treatment.

Table 3.5. Drug structure according to the regulation of common drugs/special controlled drugs at DNPH in 2021

Drug group	Quantity	Proportion (%)
Common drugs	107	95,54
Special control drugs	5	4,46
Total	112	100,00

In 2021, special control drugs used at DNPH accounted for only 4,46%. This rate is lower than the results at the Central Psychiatric Hospital 1 in 2019 (12,61%). Because it is a specialized psychiatric hospital, this is a group of drugs that are used regularly and essential in treatment.

4. Conclusion

The Drug and Treatment Council at DNPH plays an important role in the process of establishing drug formulary. In 2021, the hospital conducted drug bidding through the Da Nang Department of Health. In the other hand, the hospital did not apply are open bidding, limited bidding, appointment of contractors, competitive offers, and self-executing.

The number of API used at DNPH in 2021 is 112, corresponding to 296 drugs. In which, 290 items are modern medicine (94,64%), the remaining are traditional and herbal medicines (5,36%). The list of drugs used at the hospital can be divided into 19 groups. The group of drugs used the most are antipsychotic drugs and drugs acting on the nervous system (20,54%). The second ranked group is gastrointestinal drugs (11,61%).

The proportion of oral drugs (68,8%), is about 3 times higher than that of injections and

Structure of drugs lists according to regulatory regulations: The results of analysis of the structure of used drugs according to regulations are presented in the following Table 3.5.

infusions (20,8%). Hospitals mainly use single-API drugs (85,71%). The use of generic drugs and domestic drugs is quite high, at 90,57% and 65,2%, respectively. Special control drugs in the drug list include 5 items, only accounting for 4,46%, the rest are common drugs.

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