

CURRENT CAPACITY FOR IMPLEMENTING DIABETES PREVENTION ACTIVITIES AT HEALTH STATIONS AT COMMUNE HEALTH CENTERS OF HA NOI IN 2023

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ABSTRACT

Objective: To describe the current capacity for implementing diabetes prevention activities at commune health centers (CHCs) of Ha Noi in 2023.

Study design: Cross-sectional description.

Results: The rate of CHCs with health insurance for examination and treatment of diabetes is 43,52%. The proportion of doctors participating in diabetes diagnosis and treatment at health stations in the area is 17,70%. The percentage of health stations with less than 50% of essential consumable supplies is the highest, accounting for 98,45%. The percentage of health stations with less than 50% of essential medications is also high, at 84,28%. Health stations are not fully equipped with the necessary medications for treatment as stipulated by the Ministry of Health. The main medications provided at these stations are Metformin (34,89%) and Gliclazide (30,57%).

Conclusion: Diabetes prevention and management services at grassroots level have not been fully and widely deployed throughout the city. It's strongly recommended to enhance the availability and readiness of diabetes management services and to invest the essential supplies and medication for diabetes screening, early detection and treatment at primary care, particularly for CHCs in the inner-city and suburban areas.

Keywords: Diabetes management, commune health center, primary care.

1. INTRODUCTION

Diabetes mellitus is a disease that causes many complications that affect longevity, quality of life and requires high treatment costs, so it has become an economic burden for individuals, families and the entire society. In Vietnam, according to statistics from the Ministry of Health, there are about 3,8 million people with diabetes, this number is expected to increase to 6,3 million by 2045; of which 68,9% do not know they have diabetes and There are about 29.000 people dying related to diabetes every year, equivalent to 80 deaths every day [1]. According to the report of the Hanoi Center for Disease Control, as of October 31, 2023, Hanoi is managing and treating 101.180 people with diabetes at the commune, ward, and town health stations in the area [2]. The increase in the disease is closely related to risk factors such as obesity, limited physical activity, smoking, alcohol consumption and non-compliance with proper nutrition [3]. In order to

cope with the rapid increase in the rate of people with diabetes, the Vietnamese Government issued Decision No. 155/QĐ-TTg dated January 29, 2022 approving the National Plan for Prevention and Control of Non-Communicable Diseases and Mental Health Disorders for the period 2022-2025 [4]. It emphasizes that primary health care (including commune, ward, town and village health care) associated with primary health care and preventive medicine is a sustainable and cost-effective management strategy in Vietnam [5]. In reality, diabetes management activities are mainly focused on central and provincial hospitals, while this activity is largely not well implemented at health stations [6]. Guidelines, equipment and medicines for primary health care are only provided at a basic level.

In order to provide more evidence for diabetes prevention and management, we conducted this study with the following objectives: Describe the current

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status of diabetes prevention capacity at commune, ward and town health stations in Hanoi in 2023.

2. METHOD

2.1. Research subjects: commune, ward and town health stations (collectively referred to as CHCs) in Hanoi.

2.2. Research time and location: The study was implemented from November 2023 to September 2024 at CHCs in Hanoi.

2.3. Research design: Cross-sectional

2.4. Research method

- *Sample size:* 579 health stations in the area

Data collection method: Conduct a survey of health stations through the interview method through a self-completed questionnaire sent to health stations to collect data on human resources, drugs, equipment, and service provision at health stations. The self-completed questionnaire for health stations consists of 5 components and is built based on the research of author Bui Thi Minh Thai (2020) on “Current status of capacity to detect, manage and treat some non-communicable diseases at health stations in Hanoi city” [7].

- *Data processing:* Data was cleaned, entered using Epidata 3.1 software, processed using STATA 14.0 statistical software, Excel, using basic statistical methods.

- *Research ethics:* The study was approved by the Ethics Council in Biomedical Research of Hanoi Medical University. The study ensures the voluntary participation of the subjects.

3. RESEARCH RESULTS

Table 1. Number of health insurance clinics providing medical examination and treatment for some common non-communicable diseases (n=579)

NCDs	Number	Percentage
Hypertension	385	66,49
Diabetes	252	43,52
COPD	96	16,58
Cancer	63	10,88
No health insurance	188	32,41

Table 1 shows that the proportion of CHCs implementing examination and treatment of hypertension is the highest (66,49%), followed by diabetes (43,52%) and

COPD (16,58%), the lowest is cancer. letters (10,88%). Of which, the rate of health insurance treatment is only 32,41%.

Table 2. Human resource situation at health stations in Hanoi (n=579)

Human Resources	Number of staff n (%)	Number of staff participating in diabetes examination and treatment n (%)	Number of staff participating in risk factor communication and consultation n (%)
Doctors	595 (4,61)	530 (17,70)	513 (7,60)
Medical Practitioners	1.283 (9,94)	967 (32,29)	987 (14,62)
Nurses/ Midwives	1.566 (12,13)	596 (19,90)	935 (13,85)
Bachelor of Public Health	120 (0,93)	34 (1,14)	66 (0,98)
Others	747 (5,79)	189 (6,31)	301 (4,46)
Village Health	2.407 (18,65)	238 (7,95)	1.183 (17,52)
Collaborators	6.190 (47,95)	441 (14,72)	2.768 (40,99)
Total	12.908 (100)	2.995 (100)	6.753 (100)

The results of Table 2 show that: the percentage of doctors at the health station accounts for 4,61%; in which the percentage of doctors participating in diabetes examination and treatment is 17,70% and the percentage of collaborators participating in communication and counseling on health care is the highest, accounting for 40,99%. The village health station has the highest number of staff, but the number participating in diabetes examination and treatment is lower than other groups.

Table 3. Percentage of CHSs with essential consumables and essential drugs in diabetes prevention (n=579)

Main content	By area (n, %)		Total
	Innner city	Outer city	
Consumables			
< 50%	166 (100)	404 (97,82)	570 (98,45)
50 - <70%	0	5 (1,21)	5 (0,86)
≥ 70%	0	2 (0,48)	2 (0,35)
100%	0	2 (0,48)	2 (0,35)
Essential medicine			
< 50%	164 (98,8)	324 (78,45)	488 (84,28)
50 - <70%	2 (1,2)	82 (19,85)	84 (14,51)
≥ 70%	0	7 (1,69)	7 (1,21)
100%	0	0	0

The results of Table 3 show that 100% of inner-city health stations have <50% of all types of supplies; 0,48% of suburban health stations have 100% of all essential consumables (the rate for the whole city is 0,35%). By region, the proportion of CHCs in suburban areas with essential drugs to treat diabetes is higher than in urban areas. No CHC has 100% of all medicines

Table 4. Percentage of health stations providing drugs for diabetes treatment (n=579)

Medicine		Gliclazid	Metformin	Insulin
		n (%)	n (%)	n (%)
Availability	Yes, sufficient	177 (30,57)	202 (34,89)	12 (2,07)
	Yes, insufficient	14 (2,42)	9 (1,56)	7 (1,21)
	No	388 (67,01)	368 (63,55)	560 (96,72)
Usage status	Regular use	176 (30,39)	195 (33,68)	13 (2,24)
	Rare use	11 (1,89)	13 (2,26)	8 (1,38)
	No use	392 (67,71)	371 (64,06)	558 (96,38)
Covered by health insurance	Yes	183 (31,61)	200 (34,54)	15 (2,59)
	No	396 (68,39)	379 (65,46)	564 (97,41)

The results of Table 4 show: a serious shortage of diabetes treatment drugs at health stations, especially Insulin (96,72% do not have it). Although Gliclazide and Metformin have a higher availability rate, more than 63% of stations still do not provide it. Drug usage is also low, with only 2,24% of stations using Insulin regularly. Furthermore, the rate of health insurance coverage for Insulin is extremely low (2,59%).

Table 5. Percentage of health stations providing diabetes treatment supplies (n=579)

Characteristic		Materials	Blood sugar test strips	Urine sugar test strips
		n (%)	n (%)	n (%)
Availability	Yes, sufficient	171 (29,53)	46 (7,94)	
	Yes, insufficient	86 (14,85)	31 (5,35)	
	No	322 (55,62)	502 (86,71)	
Usage status	Regular use	186 (32,12)	34 (5,87)	
	Rare use	62 (10,71)	37 (6,39)	
	No use	331 (57,17)	508 (87,74)	
Covered by health insurance	Yes	135 (23,32)	31 (5,35)	
	No	444 (76,68)	548 (94,65)	

The results of Table 5 show that the rate of providing diabetes treatment materials at health stations is still very low. For blood glucose test strips, only 29,53% of stations have enough, while 55,62% do not have any. Urine glucose test strips are lower, with 86,71% not having any. The usage is also poor, with more than 57% of stations not using blood glucose test strips and 87,74% not using urine test strips. The rate of health insurance payment for both types of materials is very low, only 23,32% for blood glucose test strips and 5,35% for urine test strips.

Table 6. Average number of technical services performed by the health facility (n=579)

Services Average (min-max)	Innner city	Outer city	Total
Services in risk factor prevention and control	4,37 (0-6)	4,5 (0-6)	4,46 (0-6)
Diabetes detection	4,97 (0-14)	5,25 (0-14)	5,17 (0-14)
Management, consultation, treatment	4,11 (0-13)	4,02 (0-13)	4,05 (0-13)
Average total number of techniques and services	17,81 (0-47)	18,4 (0-47)	18,23 (0-47)

The results of Table 6 show that the service techniques in diabetes prevention at health stations in suburban areas are always higher than in inner city areas.

4. DISCUSSION

Our study was conducted to assess the availability of diabetes management services at health stations. The survey results provide an overview of the prevalence of common non-communicable diseases at 579 health stations that provide health insurance examination and treatment. The rate of health stations providing diabetes management and treatment services is 43,52%, higher than the study by author Vo Duc Toan (2019) with the rate of health stations providing diabetes management services of 40,8% [8]. This result can be explained by the fact that diabetes is a complex disease with many dangerous complications, so the capacity of some stations is still not good enough to implement diabetes management services. Moreover, according to the regulations of the Ministry of Health, accurate diagnosis of diabetes must be performed at the district level or higher. Therefore, diabetes diagnosis, treatment and management activities at some health stations have not been given much attention.

Village health workers play an important role in the primary health care system, but their participation in medical examination and treatment activities is limited. This may be due to the lack of skills of village health workers or the lack of effective coordination with health stations. The lack of doctors in health stations can put great pressure on doctors and nurses in disease management. Furthermore, WHO research shows that additional doctors and nurses are necessary to reduce the burden on doctors, but continuous training and support are needed to ensure service quality. To address this problem, health stations should be supported by health centers or upper-level hospitals. Training, additional doctors and strengthening the role of other health workers in medical examination and treatment are necessary. At health stations, the results showed that the proportion of health stations with trained staff in diabetes prevention and control is quite high, but in reality, the quality of specialized expertise in diabetes prevention and control is not high. Meanwhile, a study by author Nguyen Thi Thi Tho and colleagues in 2014 at 116 commune/ward/town health stations to describe the current status of implementation, human resources and facilities for implementing activities to prevent and control NCDs at the grassroots health level of provinces and cities nationwide showed that the number of commune-level health workers trained in preventing and controlling NCDs was still low: 1.52 ± 1.03 for diabetes, very few staff were trained in preventing and controlling cancer and chronic obstructive pulmonary disease [9].

Regarding consumables and essential drugs: The shortage of consumables and essential drugs affects the quality of treatment and the ability to control diabetes at the grassroots level. Suburban areas have a better drug supply rate, but still do not meet the demand. This may be related to the allocation policy or the supply capacity of the health stations. Not only for diabetes

but for all other diseases, essential drugs are necessary tools to cure or alleviate the disease, thereby helping to improve health care for the people. Our research results are similar to those of author Nguyen Thi Thi Tho and colleagues in 2014, when the author said that only 7,8% of commune health stations had more than 70% of the list of essential drugs as required by the Ministry of Health [9].

Gliclazide and Metformin are two common diabetes medications, but the percentage of health facilities that have these drugs available and in sufficient quantities is not high. Specifically, only 30,57% of health facilities have enough Gliclazide and 34,89% have enough Metformin. Meanwhile, 67,01% and 63,55% of health facilities do not have these two drugs. Insulin availability is extremely low, with only 2,07% of health facilities having enough and 96,72% not having insulin. This reflects a serious limitation in insulin supply capacity at health facilities, a worrying issue for insulin-dependent diabetic patients. Our results are higher than the results in the study of author Nguyen Hoang Long (Biguanide group 4,4%, Sulfonyl urease group 28,3%) and lower than the results in the study of author S. Mendis and colleagues conducted in countries with limited resources for the management of non-communicable diseases, including Vietnam (Biguanide group 53,3%; Sulfonyl urease group 33,3%) [10], [11]. The results of our study are higher than the results in the study of author Nguyen Hoang Long, possibly due to the difference in the time of conducting the study (2014 compared to 2018), specifically, by 2015, the national strategy for the prevention and control of cancer, cardiovascular disease, diabetes, chronic obstructive pulmonary disease, bronchial asthma and other non-communicable diseases for the period 2015 - 2025 was approved, emphasizing the role of diabetes management at the grassroots health level. There is a difference in the provision of diabetes treatment drugs between regions: the highest in urban areas and the lowest in mountainous areas. In our opinion, the reason for this difference may be due to the different ways in which each district organizes and implements diabetes management, specifically this activity is directly assigned by the district health center to the scope of activities of the district hospital or health station. Another reason may also be that the provision of diagnostic equipment and tests for early detection of diabetes in the suburbs is more focused than in the inner city. Specifically, the rate of health stations performing capillary blood glucose tests in the suburbs is 76,51% compared to 51,2% in the inner city.

Regarding the number of techniques and services provided for diabetes prevention activities: The average number of techniques and services performed by health stations for diabetes and risk factor prevention is quite low. According to a survey on technical capacity at health stations by the Ministry of Health in 2021, health stations in suburban and rural areas often have a lower

number of technical services than those in urban areas [12]. The main reason is the lack of qualified human resources and appropriate equipment. The results show that more investment in equipment and human resources is needed to increase the ability to provide health services at the grassroots level. Studies also suggest that there should be a plan to strengthen the capacity of health stations in rural and suburban areas to ensure that health services are provided evenly and effectively.

5. CONCLUSION

Our research results show that the grassroots health system has not been invested in and equipped to respond to the rapid increase in diabetes in the community. It is necessary to develop support policies, empower diabetes management to health stations, develop human resources, equipment and treatment drugs, and build a financial mechanism to support health workers at the stations in diabetes management. In addition, widely disseminate information to the people about diabetes care and management services available at the stations to increase people's access to these services.

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