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Current Status of Preventive Medicine Implementation and Resident Satisfaction at Commune Health Stations in Binh Duong Province, Vietnam, 2023-2024

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ABSTRACT: The study aims to describe the current implementation of preventive health activities at commune/ward health stations in Binh Duong Province in 2023 and to assess resident satisfaction with these services. A cross-sectional descriptive study was conducted from August 2022 to April 2025, involving all 91 health stations and 336 residents who had resided in the locality for at least 12 months.The results showed that the average score for Criterion 5 – Preventive Medicine reached 17.1±1.5 points, with 86.8% of health stations scoring above 80% of the total points. The household utilization rate of preventive health services at these stations reached 72.9%. Infectious disease prevention and control activities were relatively well-implemented, particularly for dengue fever (77.6%), hand, foot, and mouth disease (66.5%), and COVID-19 (61.6%). Non-communicable disease prevention activities saw lower uptake, focusing primarily on hypertension (88.6%) and diabetes (77.8%). Other activities, such as food safety (79.6%), tobacco harm prevention (66.9%), and alcohol harm prevention (59.6%), were implemented with varying degrees of success.The majority of residents provided positive feedback on the staff's attitude, with 75.5% considering staff to be "attentive" or "very attentive," and 82.8% being "satisfied" or "very satisfied" with the quality of preventive health services. The findings indicate that while preventive medicine at Binh Duong's health stations has achieved certain milestones, further efforts are needed to improve quality, expand the scope of activities, and enhance resident satisfaction.

KEYWORDS: Commune Health Station; satisfaction; Preventive Medicine; Binh Duong.

1. INTRODUCTION

Preventive medicine serves as the pillar of primary healthcare, playing a vital role in disease prevention, risk factor control, and public health protection. Commune/ward health stations are the grassroots medical facilities directly implementing preventive activities such as infectious disease control, non-communicable disease management, environmental sanitation, food safety, and health education. The World Health Organization (WHO) asserts that strengthening primary healthcare, with preventive medicine at its core, is a sustainable solution to improving population health and reducing the global burden of disease (1). In Vietnam, enhancing grassroots healthcare and preventive medicine has also been identified as a strategic orientation in the national policy for protecting, caring for, and improving public health through 2030 (2).

Binh Dương is a province characterized by rapid urbanization and industrial development, accompanied by a significant surge in mechanical population growth. This lead to shifts in disease patterns and increasing demand for preventive health services. In this context, health stations must simultaneously ensure the full implementation of preventive activities according to the National Criteria for Commune Health while improving service quality and resident satisfaction (3). However, the current status of preventive medicine implementation and the level of resident satisfaction regarding these services in Binh Duong have not been systematically evaluated. Therefore, the study "Current status of preventive medicine implementation at health stations in Binh Duong province in 2023 and resident satisfaction with these services" was conducted to provide scientific evidence for management and propose solutions to enhance the efficiency of preventive medicine at the grassroots level.

2. RESEARCH METHODOLOGY

A cross-sectional descriptive study was conducted from August 2022 to April 2025 in Binh Duong Province, Vietnam. The study

population included all 91 commune/ward health stations (CHS) within the province and 336 local residents who had resided in the area for at least 12 months at the time of the survey.

Sampling Technique

- For Health Stations: A total population sampling method was applied, incorporating all 91 CHSs in the province into the analysis. Of these, 36 stations (39.6%) were located in urban areas, 42 (46.2%) in semi-urban areas, and 13 (14.3%) in rural areas.

- For Residents: A multi-stage sampling method was employed. In the first stage, one commune-level administrative unit representing each district/city was randomly selected. Subsequently, one quarter/hamlet was chosen from each selected commune. A sampling frame of eligible individuals was then established. The sample size for each quarter/hamlet was determined based on population size and a sampling interval (k). The first participant was identified using a random number, while subsequent participants were selected by adding the interval k until the required sample size was reached.

Data Collection Tools

- Data collection at the health stations was conducted using a scoring rubric based on Decision No. 1300/QD-BYT regarding the National Criteria for Commune Health for the period up to 2030 (3). This was combined with regulations from Circular No. 03/2023/TT-BYT on job positions, staffing quotas, and professional title structures in public health units (4).

- For the residents, the study utilized a satisfaction assessment tool originally developed by UNICEF and the Ministry of Planning and Investment for Dien Bien Province in 2014 (5), adapted to fit the local context and current criteria.

Data Analysis: Collected data were entered and processed using SPSS software, version 29.0. Qualitative variables were described using frequencies and percentages. Univariate analysis was performed by calculating Odds Ratios (OR), 95% Confidence Intervals (95% CI), and p-values. Variables meeting the criteria were subsequently included in a linear regression model to adjust for confounding factors.

Ethical Considerations: Prior to the study, the objectives and contents were fully explained to all participants. Participation was entirely voluntary and carried no impact on the performance evaluation of the health stations or the personal lives of the residents. The study received approval from the leadership of the Binh Duong Provincial Health Department. All personal information and health station data were kept strictly confidential.

3. RESEARCH CONTENT

3.1. Overview of Criterion 5 – National Standards for Preventive Medicine at Commune Health Stations in Vietnam and Resident Satisfaction

According to Decision No. 1300/QD-BYT issued by the Ministry of Health regarding the National Criteria for Commune Health for the period up to 2030, Criterion 5 – Preventive Medicine is identified as a core criterion. It directly reflects the capacity of Commune Health Stations (CHS) to perform disease prevention, protection, and health promotion functions for the community (3). This criterion serves as a foundational element in strengthening grassroots healthcare, aligning with Vietnam's health system orientation of placing preventive medicine at the center.

Criterion 5 encompasses several core components: (i) Implementation of community-based infectious disease surveillance and control ; (ii) Organization and management of the Expanded Program on Immunization (EPI) ; (iii) Prevention of non-communicable diseases (NCDs) and management of health risk factors ; (iv) Ensuring environmental sanitation and food safety ; (v) Implementation of health communication and education (3). These components require health stations to not only meet organizational and human resource requirements but also ensure proactivity, continuity, and universal coverage in providing preventive health services.

Functionally, Criterion 5 emphasizes the role of the CHS as the frontline in early detection, monitoring, and controlling health risks within the community. The WHO affirms that effective preventive medicine implemented at the primary healthcare level directly impacts the reduction of the disease burden, enhances health system resilience, and promotes equity in healthcare access (6, 7). Therefore, achieving and maintaining Criterion 5 is not merely a technical-administrative milestone but a reflection of the station’s readiness to protect public health.

In this context, resident satisfaction is considered a vital indicator for evaluating the effectiveness of Criterion 5 implementation. Research indicates that satisfaction levels with grassroots health services are significantly influenced by the accessibility and quality of preventive health activities, particularly immunization, epidemic control, and health education (8, 9). In Vietnam, several studies have noted that residents provide positive evaluations of health stations with proactive preventive activities, friendly staff, and clear health information. However, limitations remain concerning preventive health personnel and implementation resources in certain localities(10).

Looking toward 2030, Criterion 5 is expected to transition from a "standard-based" evaluation to an approach based on performance effectiveness and people-centered experiences. Researching resident satisfaction in conjunction with Criterion 5 is therefore crucial; it not only reflects the current state of preventive medicine at the CHS but also provides scientific evidence to improve the quality of grassroots healthcare toward a patient-centered model.

3.2. Characteristics of Preventive Medicine Criterion Scores and Resident Satisfaction with Health Station Services in Binh Duong Province

Table 1. Total Scores for Criterion 5 – Preventive Medicine (n = 91)

Characteristics	Value	Frequency (%)
Criterion 5: Preventive medicine, HIV/AIDS control, environmental sanitation, and food safety	Mean ± SD	17.1 ± 1.5
	Above 80% (Achieved)	79 (86.8%)
	Below 80% (Not achieved)	12 (13.2%)

The overall mean score for Criterion 5 was 17.1 out of a maximum of 19 points. While 86.8% of the health stations achieved a score above 80%, there remain 13.2% of stations with scores below this threshold. This indicates an uneven implementation of preventive medicine activities across different localities. These disparities may be attributed to limitations in preventive health personnel, infrastructure, and implementation resources at certain commune health stations (9).

Table 2. Utilization of Preventive Health Services at Commune Health Stations (n = 336)

Characteristics	Content	Frequency	Percentage (%)
Households utilizing preventive health services	Yes	245	72.9
	No	91	27.1

Survey results indicate that 72.9% of households utilized preventive health services provided by the Commune Health Station, while 27.1% did not. The most common reason cited for non-utilization was being "frequently at work, uninterested, or having no perceived need." This utilization rate reflects a relatively high level of access to community-based preventive services, consistent with the central role of preventive medicine in primary healthcare as outlined in national policy orientations (3). In comparison with international evidence, numerous studies suggest that the utilization of preventive services is often lower than expected in the absence of effective health communication and comprehensive community information. This is influenced by factors such as awareness levels, health literacy, and service accessibility (11, 12). For instance, a study in Chile highlighted that information inequality and insufficient service promotion are major barriers leading to decreased preventive service utilization among certain population groups (12).

Table 3. Assessment of Infectious Disease Prevention and Control Services at Health Stations (n = 245)

Characteristics	Content	Frequency	Percentage (%)
Receipt of IDPC activities from CHS	Yes	216	88.2
	No	29	11.8
Specific IDPC activities received (n = 216)	Dengue fever	190	77.6
	Malaria	125	51.0
	HIV/AIDS	132	53.9
	Tuberculosis (TB)	137	55.9
	Hand, Foot, and Mouth Disease (HFMD)	163	66.5
	COVID-19	151	61.6
	Other infectious diseases	84	34.3

The results in Table 3 show that 88.2% of residents acknowledged receiving Infectious Disease Prevention and Control (IDPC) activities from their Commune Health Stations (CHS). This reflects the prominent role of grassroots healthcare in implementing community-based disease prevention programs, consistent with the CHS function of strengthening preventive medicine and disease surveillance at the primary healthcare level (3).

Among the IDPC activities received, Dengue fever (77.6%), Hand, Foot, and Mouth Disease (66.5%), and COVID-19 (61.6%) accounted for the highest proportions. These findings align with the epidemiological profile of Vietnam, where seasonal infectious diseases and frequent outbreaks—particularly dengue and HFMD—are prevalent (13). The WHO emphasizes that community-

based infectious disease interventions implemented by grassroots health levels are effective measures for reducing morbidity and limiting widespread outbreaks (14).

The uptake rates for Tuberculosis (55.9%), HIV/AIDS (53.9%), and Malaria (51.0%) remained at a moderate level, indicating that while National Target Programs are still being implemented, community reach is not yet uniform. The fact that 11.8% of residents did not receive any IDPC activities suggests a need to further intensify health communication, diversify outreach methods, and enhance community engagement to improve the effectiveness of infectious disease control at the grassroots level.

Table 4. Assessment of Non-Communicable Disease (NCD) Prevention and Control Services at Health Stations (n = 245)

Characteristics	Content	Frequency	Percentage (%)
Receipt of NCD prevention activities from CHS	Yes	176	71.8
	No	69	28.2
Specific NCD activities received (n = 176)	Hypertension prevention	156	88.6
	Diabetes prevention	137	77.8
	Mental health prevention	105	59.7
	Asthma - COPD prevention	98	55.7
	Cancer prevention	110	62.5
	Iodine Deficiency Disorders (IDD) prevention	99	56.2
	Other non-communicable diseases	37	21.0

The results in Table 4 indicate that 71.8% of residents received Non-Communicable Disease (NCD) prevention activities from the Commune Health Station, while 28.2% had not yet accessed these services. This reflects a fair but non-uniform level of NCD service coverage at the grassroots level. This finding aligns with the objectives of Criterion 5 – Preventive Medicine within the National Criteria for Commune Health for the period up to 2030, which identifies NCD management and prevention as a central focus (3).

Among the activities received, hypertension prevention (88.6%) and diabetes prevention (77.8%) accounted for the highest proportions. This is consistent with Vietnam's current disease patterns, where hypertension and diabetes are the two most prevalent NCDs in adults, with prevalence rates of 25.1% and 7.1%, respectively, according to the national STEPS survey (15). The WHO also affirms that integrating hypertension and diabetes management into primary healthcare is an effective and cost-efficient strategy for NCD control (16).

Activities for cancer prevention (62.5%), mental health disorders (59.7%), and Asthma-COPD (55.7%) were implemented at a moderate level, while other NCDs accounted for only 21.0%, indicating that the scope of services remains concentrated on specific priority diseases. WHO research in middle-income countries suggests that limitations in personnel and professional capacity at the grassroots level are major barriers to expanding comprehensive NCD management (17). Consequently, these study results emphasize the necessity of further strengthening the capacity of Commune Health Stations to expand coverage and enhance the effectiveness of community-based NCD prevention.

Table 5. Assessment of Rehabilitation Services and Other Health Station Activities (n = 245)

Characteristics	Content	Frequency	Percentage (%)
Other preventive health activities	Rehabilitation for people with disabilities	107	43.3
	Food safety and hygiene	195	79.6
	Prevention of tobacco harms	164	66.9
	Prevention of alcohol-related harms	146	59.6
	School health services	95	38.8
	Nutritional counseling	114	46.5
	Others	16	6.5

The results in Table 5 reveal a distinct variation in the uptake of different preventive health activities at the Commune Health Station. Among these, food safety and hygiene reached the highest rate (79.6%), followed by the prevention of tobacco harms (66.9%) and prevention of alcohol-related harms (59.6%). These areas are prioritized within national health programs and align with WHO recommendations on controlling behavioral risk factors within the community (18, 19).

In contrast, rehabilitation (RH) services for people with disabilities were received by only 43.3% of residents, while nutritional counseling (46.5%) and school health services (38.8%) also saw low access rates. These findings are consistent with

WHO's observation that rehabilitation and long-term care services at the primary healthcare level in many middle-income countries remain unevenly implemented due to shortages in specialized personnel and infrastructure (20). In Vietnam, the Ministry of Health has also noted that school health and nutritional counseling at the CHS level face challenges in inter-sectoral coordination and resource allocation (21).

Overall, the results reflect a trend where Commune Health Stations perform better in risk management activities and broad community interventions (food safety, tobacco and alcohol control), while services requiring specialized expertise or multi-sectoral collaboration—such as rehabilitation and school health—remain limited. This suggests a critical need to expand the capacity for providing comprehensive preventive health services at the grassroots level, in line with the objectives of Criterion 5 – Preventive Medicine toward 2030.

Table 6. Assessment of Resident Satisfaction with Preventive Health Services at Health Stations (n = 245)

Characteristics	Content	Frequency	Percentage (%)
Service fees for preventive health provided by CHS	Fully charged	0	0
	Partially charged	232	94.7
	Completely free	13	5.3
	Others	0	0
Healthcare staff attitude during home visits for disease prevention	Very indifferent	0	0
	Indifferent	3	1.2
	Neutral	57	23.3
	Attentive and caring	132	53.9
	Very attentive and caring	53	21.6
Satisfaction level with the quality of preventive health activities at the CHS	Completely dissatisfied	11	4.5
	Dissatisfied	3	1.2
	No opinion (Neutral)	28	11.4
	Satisfied	138	56.3
	Very satisfied	65	26.5

The satisfaction assessment results show that there were no cases of full service fees being charged for preventive health services at the Commune Health Stations (CHS). The vast majority of residents (94.7%) paid partial fees, while only 5.3% received services completely free of charge. This partial fee structure aligns with public health financing policies transitioning towards supporting resident access with affordable costs, thereby avoiding excessive economic barriers to essential services (22). The WHO emphasizes that direct out-of-pocket costs are a decisive factor in the utilization of preventive services and should be minimized within primary healthcare (23).

Regarding the attitude of healthcare staff during home visits, most respondents rated them as "attentive and caring" (53.9%) or "very attentive and caring" (21.6%). This reflects the efforts made to build positive relationships between CHS staff and the community. Previous studies in grassroots healthcare contexts have also shown that a friendly and respectful attitude is a key driver of resident satisfaction and a strong predictor of continued service utilization (24, 25).

The overall satisfaction level with the quality of preventive health activities was highly positive, with 56.3% satisfied and 26.5% very satisfied (totaling 82.8%). This rate is higher than some previous satisfaction surveys regarding grassroots preventive services in Vietnam, which recorded overall satisfaction levels around 70–75% (26). This indicates that the community increasingly values the preventive health services provided by the CHS. However, the 15.7% who remained neutral or dissatisfied suggests that certain service aspects still require improvement, such as access time, health communication materials, or the quality of counseling at the point of care.

3.3. Proposed Measures to Enhance Resident Satisfaction with Preventive Health Services at Health Stations

First, enhance the quality and coverage of preventive health activities at the CHS. The study results indicate that the uptake of preventive services remains uneven across different sectors, particularly in rehabilitation, school health, nutritional counseling, and certain non-communicable disease (NCD) programs. Therefore, Health Stations must fully and synchronously implement preventive health activities in accordance with their grassroots functions, while prioritizing underdeveloped services to better meet the actual needs of the population.

Second, maintain and improve the professional attitude, communication skills, and counseling expertise of healthcare staff. The "attentive and caring" and "very attentive and caring" attitudes of staff were highly valued by residents and served as key drivers of satisfaction. Consequently, ongoing training in communication skills, household counseling, and community engagement is essential, especially for activities involving direct home visits.

Third, ensure transparency and affordability in the fee structure for preventive health services. Although most services currently involve only partial fees, costs can still impact access and satisfaction levels. Health Stations should clearly disclose fee rates and service contents while intensifying communication to ensure public understanding. Priority should remain on maintaining free preventive services for vulnerable groups.

Fourth, improve service quality based on resident needs and feedback. The segment of the population that remains dissatisfied or neutral highlights a gap between service delivery and expectations. Regularly collecting feedback and tailoring the content and format of activities to local characteristics will help enhance the overall resident experience and satisfaction.

Fifth, strengthen health communication and education while fostering community participation. When residents clearly understand the role and long-term benefits of preventive medicine and are actively engaged in disease prevention, their satisfaction and trust in the Health Station will be sustainably enhanced.

4. CONCLUSION

The study demonstrates that preventive medicine activities at commune/ward health stations in Binh Duong Province in 2023 were implemented with relative consistency, with the majority of stations achieving high scores according to Criterion 5 of the National Criteria for Commune Health. The rates of resident access and utilization of preventive services, alongside high levels of satisfaction regarding service quality and staff attitudes, reflect the vital role of health stations in primary healthcare. However, the extent of service implementation and uptake remains uneven across different activity groups, particularly in non-communicable disease prevention, rehabilitation, and several other preventive health programs. These findings suggest a critical need for continuous quality improvement, expansion of service scope, and intensified health communication to better meet the population's healthcare needs. The evidence obtained from this study provides an important scientific basis for policy planning and the proposal of solutions to enhance the efficiency of preventive medicine at the grassroots level in the coming period.

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