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Innovation

The Result of Proactive Colorectal Cancer Screening in Lamphun Province

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Abstract

Background: Colorectal cancer is a highly common cancer and is the cause of death in the world and Thailand. Researcher and leader of the team developing the cancer service system developed a proactive colorectal cancer screening in Lamphun Province 2018 - 2022.

Objective: To study the results of proactive colorectal cancer screening in Lamphun Province.

Materials and Methods: This retrospective study is designed to examine the results of proactive colorectal cancer screening using the FIT, which was considered the first investigation and confirmed by colonoscopy. The target group is the general public aged 50 -70, and the data is analyzed using descriptive statistics.

Results: The results of the proactive screening for colorectal cancer use a fecal immunochemistry test (FIT) cut of 100 ng/ml. Screening by providing services at nearby hospitals when FIT results are positive; registering the colonoscopy appointment on Google Sheets; and performing bowel preparation at the community hospital. Proactive screening found that we were able to screen patients thoroughly in each area, which is not different. Compared with research statistics, there is no statistical significance; the p-value is 0.288. It shows that colorectal cancer screening services are accessible to all areas, even in remote areas, and results from colonoscopy found colonic polyps at 32.09% and cancer at 1.13%. Relevant medical personnel agree that proactive screening methods in Lamphun Province should be used as a standard approach for colorectal cancer screening.

Conclusion: This study demonstrated that proactive colorectal cancer screening has been adjusted from initial screening with the FIT and colonoscopy appointment system. Bowel preparation system. Suitable for the context of Lamphun Province.

Keywords: FIT, Colorectal cancer screening, Colonoscopy

Introduction

Colorectal cancer is a common cancer. It is the third most common cancer in males after liver and bile duct cancer and lung cancer, and the second most common cancer in females after breast cancer. Colorectal cancer is a disease that is a significant problem. It is the cause of death for the world's population, including in Thailand.[1] Risk factors for developing colorectal cancer include personal factors such as gender, age, family history of cancer, healthy behaviors, consumption of pork, beef, and high-fat foods, drinking alcohol, smoking, having a BMI above the standard, and being at risk for colorectal cancer.[2,3] There are several methods for screening for colorectal cancer, such as detection of blood in the stool (FIT), colonoscopy, flexible sigmoidoscopy combined with double contrast barium enema, and computed tomography colonoscopy[4-6] which found that cancer screening can reduce the incidence.[6] In the early stages of colorectal cancer, there are usually no symptoms. The symptoms of colorectal cancer include blood in the stool, abdominal pain, bowel habit changes such as constipation alternating with diarrhea, and the stool

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becoming smaller. Detecting cancer at an early stage and treating it will result in good treatment. Colonic polyps are precancerous lesions that can develop into cancer. The detection and removal of polyps can reduce the development of colorectal cancer. Colonic polyps are abnormal growths of the colonic mucosa, divided into many types. Some types of polyps may not change until they become colon cancer, such as hyperplastic polyps, inflammatory polyps, and pseudopolyps. However, some types are at risk of changing to become colon cancer, such as adenomatous polyp, sessile serrated adenoma, and traditional serrated adenoma, detected by colonoscopy and rectal examination.[7-9]

Surgery department Lamphun Hospital has developed a care system for colorectal cancer patients. Including the development of a service system. In the past, colorectal cancer screening was provided at Lamphun Hospital when patients with abnormal symptoms came to see the doctor and suspected that they had colorectal cancer. The importance of developing proactive colorectal cancer screening using the FIT as a preliminary screening is that the examination is simple and convenient, can be performed in every area, the examination cost is not high, and screening costs can be reimbursed according to universal coverage of Thailand[8,10] and confirmation by colonoscopy for the general public, precisely those aged 50 to 70.[8] Effectively and as a standard guideline for colorectal cancer screening in Lamphun Province.

Materials and Methods

This retrospective study examined the results of proactive colorectal cancer screening using the FIT, which was considered the first investigation and confirmed by colonoscopy. The study was conducted between 2018 and 2022. The data collection location is the chemotherapy unit at Lamphun Hospital. Network Community Hospital Lamphun hospitals include Li Hospital, Ban Hong Hospital, Pa Sang Hospital, Ban Thi Hospital, Wiang Nong Long Hospital, Maetha Hospital, and Thung Hua Chang Hospital.

Inclusion criteria

Population age 50-70[8]; consent to undergo screening

Tools

Research tools developed by the researcher consist of

1. The general information record of network medical personnel providing colorectal cancer screening services includes gender, age, and length of service at the current unit. Training experience in caring for patients with colorectal cancer (use the topic to create a Google Form).

2. Record the patient satisfaction questionnaire with services. Topics include gender, age, and area of residence. The answers are open-ended, and overall satisfaction with service was measured using a Likert scale that measures satisfaction on five levels.

3. Record the possibility of colorectal cancer screening. There are scores from 1 to 5, including actual practice in the work context, convenience, effectiveness of practice, and overall satisfaction.

4. Record the target group data: Lamphun Hospital number, identification number, name-surname, telephone number, date of birth, address, medical benefits scheme, sub-district, service unit number, and colonoscopy appointment date and time. (Use the topic to create a Google Form.) The answers are open-ended.

5. The record form for indicators consists of topics. Total number of target groups, Number of target groups screened with a FIT. Results of screening with a FIT. Number of target groups that need colonoscopy. The number of target groups that actually do colonoscopy and colonoscopy results.

Inspection of tool quality

1. Checking the quality of the tools (content validity) is as follows: General information record of network medical personnel, Record the patient satisfaction questionnaire. Record the possibility of colorectal cancer screening, the form for target group data, and the form for indicators. To be checked for content validity by inspection by 3 experts: 2 medical professors and 1 surgical specialist to check the appropriateness of the language used. Clarity of questions Then improve according to suggestions.

2. Checking the tool's confidence (reliability): The researcher inspected the feasibility recording tool for proactive colorectal cancer screening confidence. The researcher tested it on a group of samples with similar characteristics. The sample group studied is 1. doctors and 2. professional nurses to improve before use. Clarity of language and understanding of the sample group.

Methods

Proactive colorectal cancer screening is underway in Lamphun Province. Select a FIT cut of 100 ng/ml (hemoglobin cut-off concentration of 100 ng/ml). Proactive screening involves providing services at a nearby hospital. If the FIT results are negative, make an appointment for repeat testing every year. If the FIT results are positive, prepare the patient by going to the lab. Register for the colonoscopy appointment system on Google Sheets. Next, the pharmacist at Lamphun Hospital coordinated the delivery of medicine to prepare the bowel. When the appointment day arrived, the patient came for a colonoscopy at Lamphun Hospital.

Data analysis

The purpose of this study is to study the results of proactive colorectal cancer screening in Lamphun Province on the colorectal cancer screening rate in the group, target rate of discovery of bowel diseases, satisfaction of patients, and satisfaction of Lamphun Hospital network personnel in October 2017 - October 2022.

Table 1 Shows the number of samples screened according to area or treatment eligibility.

District	2561		2562		2563		2564		2565		Average
	Screen	%	Screen	%	Screen	%	Screen	%	Screen	%	(%)
Muang	3,370	85.96	3,400	78.88	2,524	90.6	1,971	67.04	379	11.21	66.74
Maeta	1,280	100	1,085	89.67	921	87.5	455	49.1	0	0	65.26
Ban Hong	1,114	91.31	1,288	96.84	866	76.1	959	97.86	551	48.76	82.17
Lee	670	42.22	1,639	93.66	1,070	64.4	1,335	90.82	1,331	78.76	73.97
Thung Hua Chang	402	96.87	460	100	437	98.6	388	98.23	339	74.51	93.64
Pasang	1,358	81.81	1,739	95.03	1,188	78.1	0	0	0	0	50.99
Banthi	450	80.36	620	100	371	74.5	415	94.32	503	99.60	89.76
Wiang Nong Long	447	84.34	363	62.59	320	61.2	191	42.44	399	77.48	65.61
Lamphun Municipality					192	100					
Sirivej					101	46.1			187	85.0	

The table shows the community hospital network. Thung Hua Chang Hospital has a continuous screening rate in the target group, accounting for an average of 93.64%. In spite of being in the furthest area from the center of Lamphun Province,[11] people can access services.

Table 2 Shows a comparison of percentage differences in access to colorectal cancer screening services. One-way ANOVA at a confidence level of 95%.

	$\bar{x}$	SD	df	F	*P*-value
Network to access colorectal cancer screening services			7	1.286	0.2888
Muang	66.74	32.29			
Maeta	65.26	41.28			
BanHoong	82.17	20.60			
Lee	73.97	21.18			
Thung Hua Chang	93.64	10.75			
Pasang	51.00	46.98			
Banthi	89.76	11.66			
Wiang Nong Long	65.61	16.26			

The table shows that access to colorectal cancer screening in each area is not different. Compared with research statistics, there is no statistical significance; the *p*-value is 0.288. It shows that colorectal cancer screening services are accessible in all areas, even in remote areas.

Table 3 Shows the results of the colorectal screening program.

Year	Target group that is also filtered FIT Quantity (%)	Screening results, as well FIT		Target group for colonoscopy Quantity (%)	Colonoscopy result		
		Positive Quantity (%)	Negative Quantity (%)		Malignancy Quantity (%)	Polyp Quantity (%)	Normal Quantity (%)
2018	9,091 (82.74)	214 (2.35)	8,877 (97.65)	144 (67.29)	3 (2.08)	44 (30.56)	97 (67.36)
2019	10,622 (87.86)	655 (6.16)	9,967 (93.83)	398 (60.76)	5 (1.26)	108 (27.14)	285 (71.61)
2020	7,993 (79.70)	586 (7.33)	7,407 (92.67)	508 (86.69)	4 (0.79)	169 (32.87)	335 (65.94)
Including the period before the epidemic	27,706 (83.67)	1,455 (2.25)	26,251 (94.75)	1,050 (72.16)	12 (1.14)	321 (30.57)	717 (68.29)
2021	5,714 (50.89)	522 (9.14)	5,192 (90.86)	288 (55.17)	3 (1.04)	104 (36.11)	181 (62.85)
2022	3,689 (28.57)	515 (13.96)	3,174 (86.04)	164 (31.85)	2 (1.22)	57 (34.76)	105 (64.02)
Including the period of the epidemic	9,403 (38.95)	1,037 (1.10)	8,366 (88.97)	452 (43.59)	5 (1.11)	161 (35.62)	286 (63.27)
Total	37,109 (64.82)	2,492 (6.67)	34,844 (93.33)	1,502 (60.27)	17 (1.13)	482 (32.09)	1,003 (66.78)

The table shows that screening coverage was high before the outbreak of the coronavirus in 2019, accounting for 83.67%. Screening results with FIT positives were calculated at 2.25%, confirmed by colonoscopy at 72.16%. Colonic polyps were found at 30.57%, and malignancy at 1.14%.

During the coronavirus outbreak, screening coverage was reduced by 38.9%. FIT-positive screening results were 1.10% in all screened patients who confirmed an appointment. Colonoscopy accounted for 43.59%. Colonic polyps were found at 35.62% and malignancy at 1.11 %.

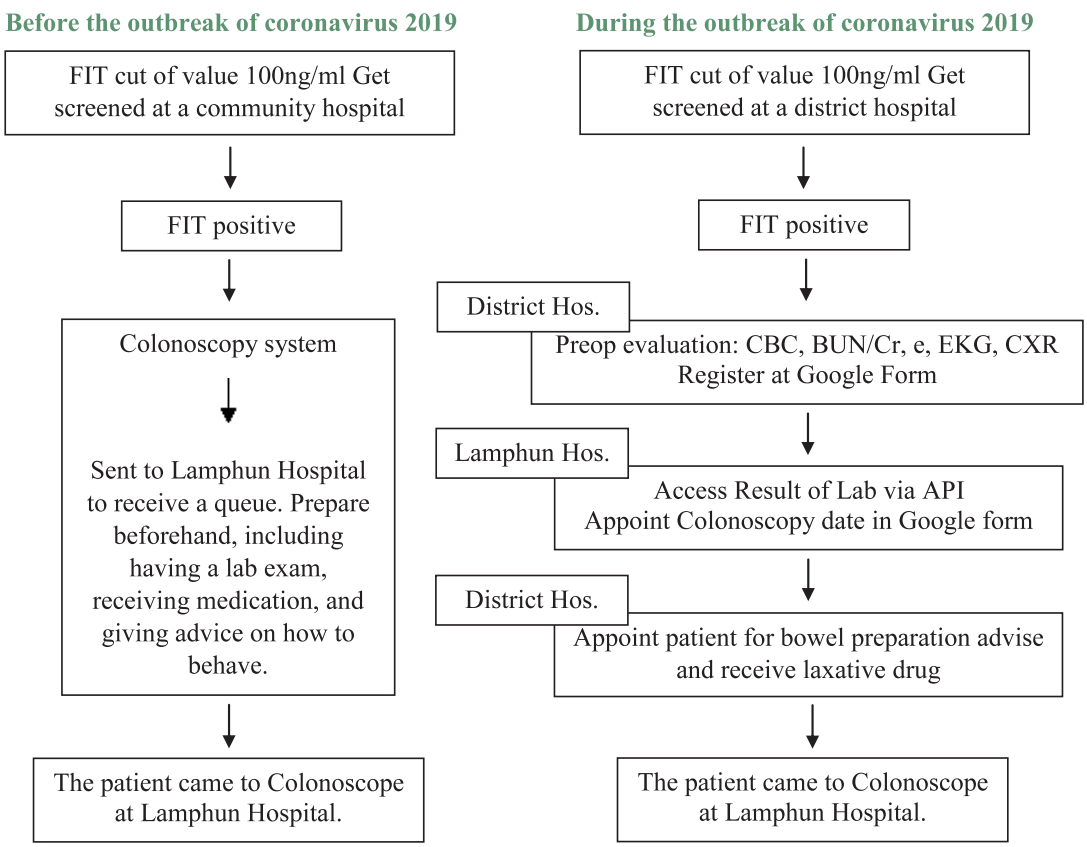
Table 4 Shows the colorectal cancer screening rates in the target group. The discovery rate of intestinal and rectal diseases includes malignant polyps.

Topic	2018	2019	2020	2021	2022
Colorectal cancer screening rates in target groups	82.74	87.86	79.70	50.89	28.57
Rate of discovery of intestinal and rectal diseases					
Malignant	2.08	1.26	0.79	1.04	1.22
Polyp	30.56	27.14	32.87	36.11	34.76

From the table, it is found that during the situation before the outbreak of the coronavirus in 2019, operations were smooth, and screening had a good trend, but at the end of the year 2020, an outbreak of the coronavirus in 2019, colorectal cancer screening rates in the target group decreased accordingly. The rate of discovery of colon and rectal diseases, including cancer, is not high, but the discovery and removal of polyps in the colon that may have changed into colon cancer has good results and still maintains the level. The screening was satisfactory.

Lesson Learned

From the situation of the spread of coronavirus in 2019, it has been found that using technology to help in the process can reduce the chance of exposure and spread of infection. It is also very convenient for medical personnel. Access to the service can be done anywhere, including an internet network. Reduce waiting to receive service. Reduce congestion in the hospitals. As a result, service recipients do not have to lose both time and travel expenses. Therefore, operations are planned to be consistent with the situation as follows:



Satisfaction of patients

Patients' overall satisfaction with the proactive colorectal cancer screening service was 94.67%.

Satisfaction of Lamphun Hospital network personnel

Personnel in the network believe that proactive colorectal cancer screening appropriate to actual practice in the work context accounts for 94%, convenience for 95%, effectiveness for 97%, and overall satisfaction for 93%.

Results

Proactive colorectal cancer screening is underway in Lamphun Province. Select a FIT cut of 100 ng/ml. Proactive screening involves providing services at a nearby hospital. When FIT results are negative, make an appointment for repeat testing every year. If FIT results are positive, the patient is prepared for preoperative evaluation. Register for the colonoscopy appointment system on Google Sheets. When the doctor who performed the colonoscopy checked the lab results, and they were normal, he issued an appointment queue. The pharmacist at

Lamphun Hospital coordinated the delivery of medicine to prepare the bowel. When the appointment day arrived, the patient came for a colonoscopy at Lamphun Hospital.

Patient side

The results of the screening found that the rate of discovery of colon and rectal diseases, including cancer, was not high. The discovery and removal of polyps in the large intestine that may have changed to become colon cancer had good results when using the FIT cut of 100 ng/ml, consistent with Marut's study. Wattanawongwiboon in 2019,[10] where the study examined the predictive value of positive results and the population that must be admitted to the gastrointestinal endoscopy unit. When screening for colon cancer with FIT 50 compared to FIT 100 in Nakhon Pathom Hospital, the results of the study found that colon cancer screening using FIT 100 ng/ml has a lower number needed to colonoscope and a lower positive rate and dropout rate than FIT 50 ng/ml; therefore, it is a screening method. appropriate for countries with personnel limitations and equipment for gastrointestinal endoscopy.

Conclusion

This study was able to demonstrate that proactive colorectal cancer screening has been adjusted from initial screening with the FIT and colonoscopy appointment system. Bowel preparation system. Suitable for the context of Lamphun Province. It should be used as a standard approach for colorectal cancer screening in Lamphun Province.

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Conflicts of interest

The authors declare no conflicts of interest.

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