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A Report of Coronary Artery Bypass Graft Patients Receiving Telehealth Program Monitoring

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In Thailand

CAD is a significant health problem and cause of death and disability worldwide. The WHO (2019) has estimated that 9.4 million people around the world died from CAD to represent 17.9 % of all global deaths in 2016, an estimate 31% all deaths worldwide.

In Thailand, CAD has continued to be the second leading cause of death (12.61 % of total deaths) in 2017 (Ministry of Public Health, Bureau of Non-Communicable Disease, 2018).

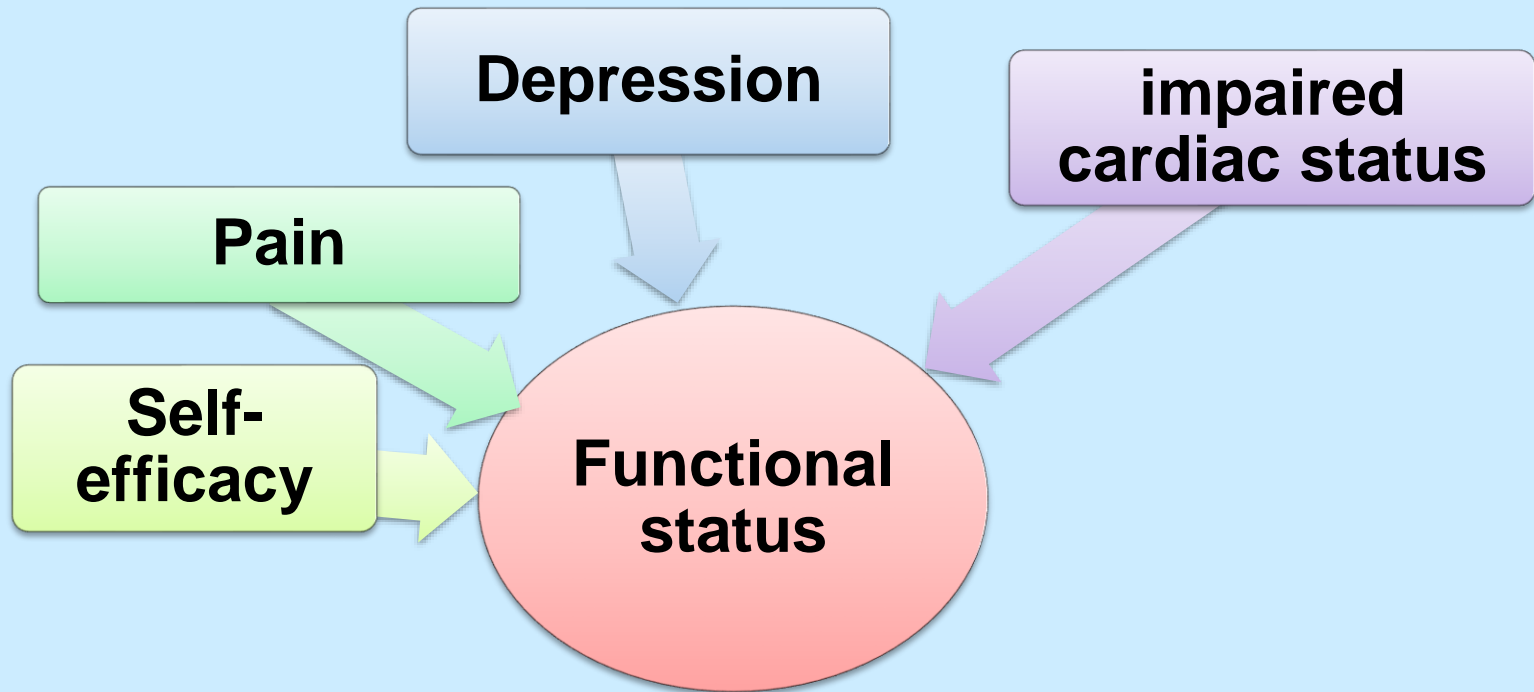


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Coronary Artery Bypass Graft

A major surgery for CAD





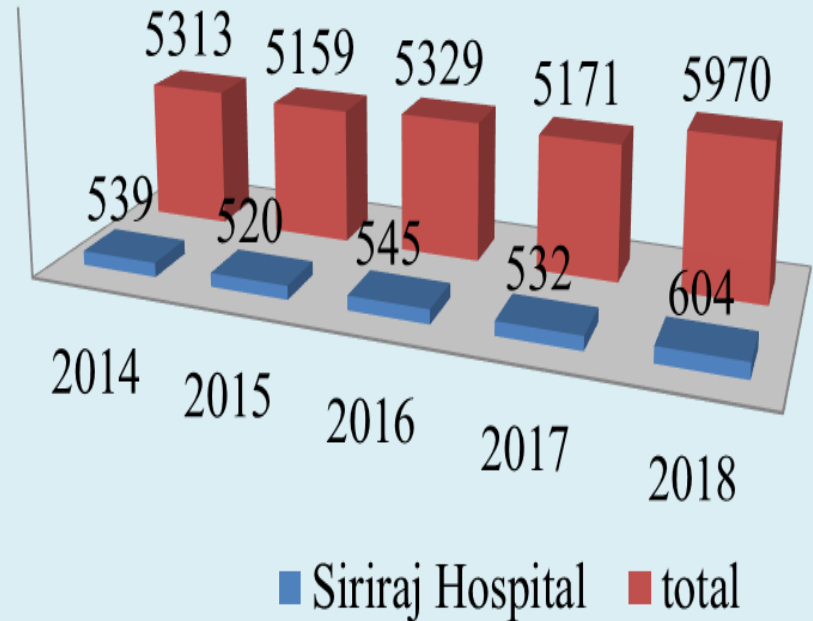
Significance

1. There are limits to activity in the first week, the ability of body function decreased in a month.
2. CABG patients had low activity and less exercise after Discharge
3. For the first 4 weeks, The patient has the greatest need for help from the health care team.
4. CABG patients return to hospital and readmission, the cause is preventable like pleural effusion



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For CABG surgery, 539 – 604 CABG cases underwent surgery each year during 2013- 2018, accounting for 10% of all CABG surgeries in Thailand (The Society of Thoracic Surgeons of Thailand, 2019).





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Following the Telehealth Program

Week 1 - Patients sent data on blood pressure, pulse rate and bodyweight once before meals in the mornings.

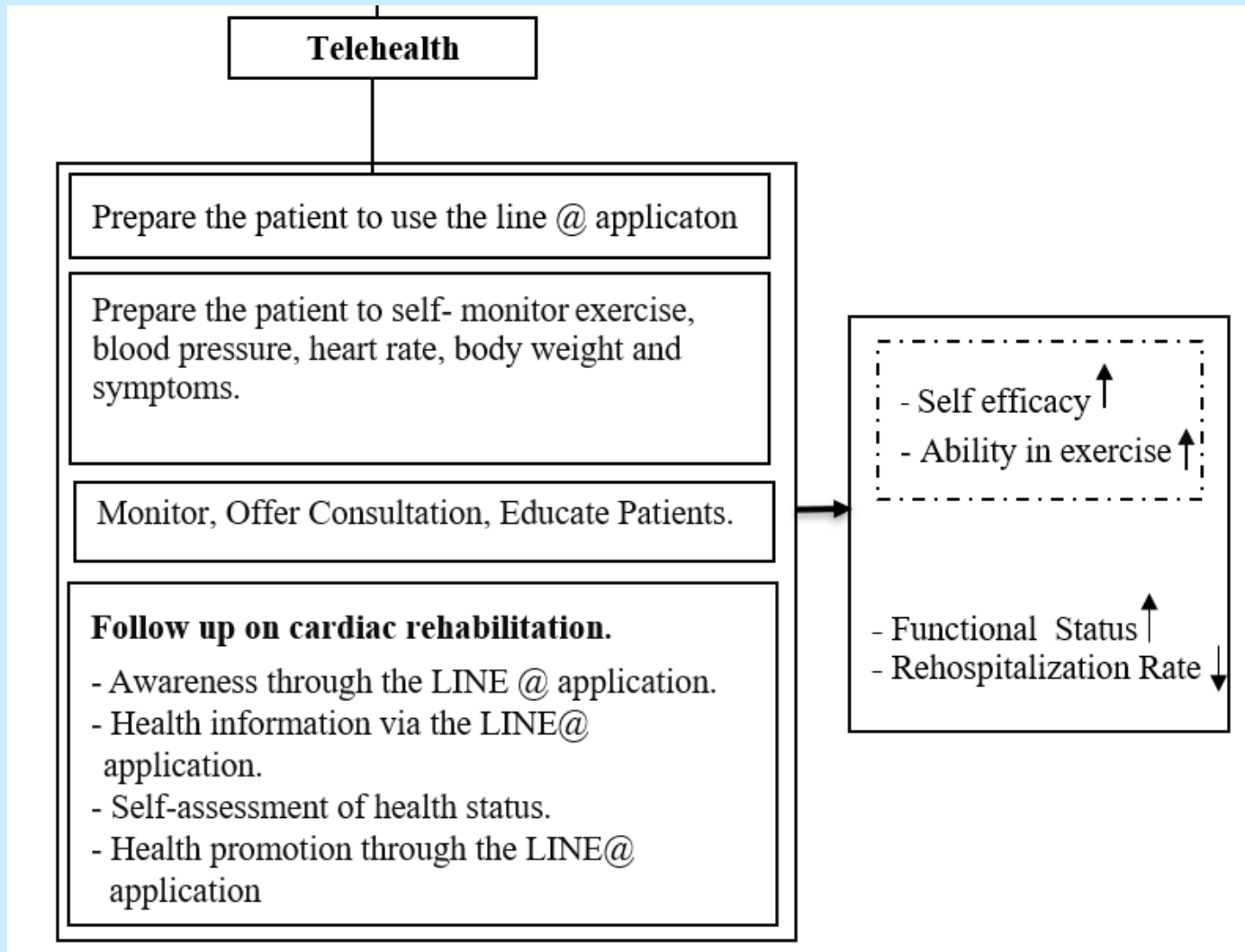
Week 2 - Patients sent data on blood pressure and pulse rate once a day in the mornings.

Weeks 3 and 4 - Patients sent blood pressure and pulse rate 1 time a day. The researcher followed up by telephone once a week.



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Following the Telehealth Program





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Setting data

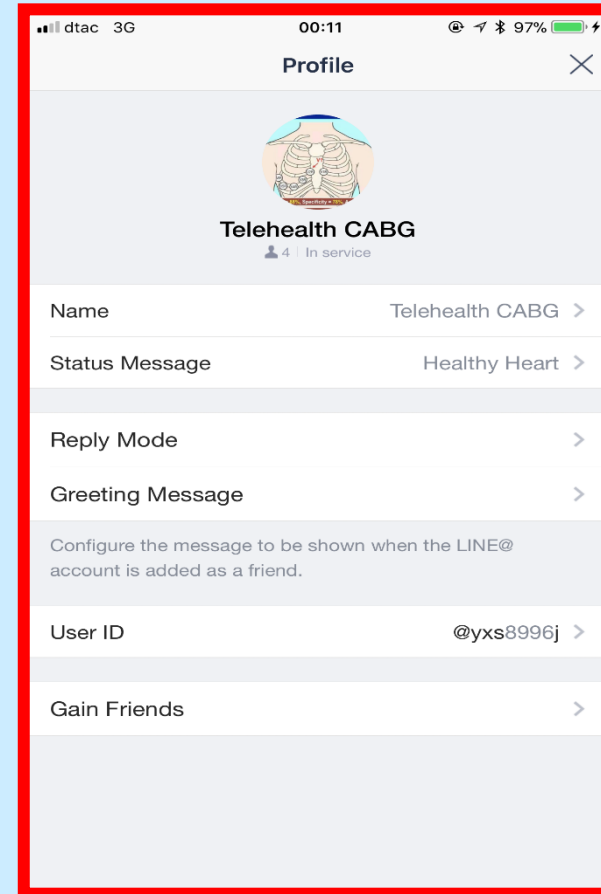
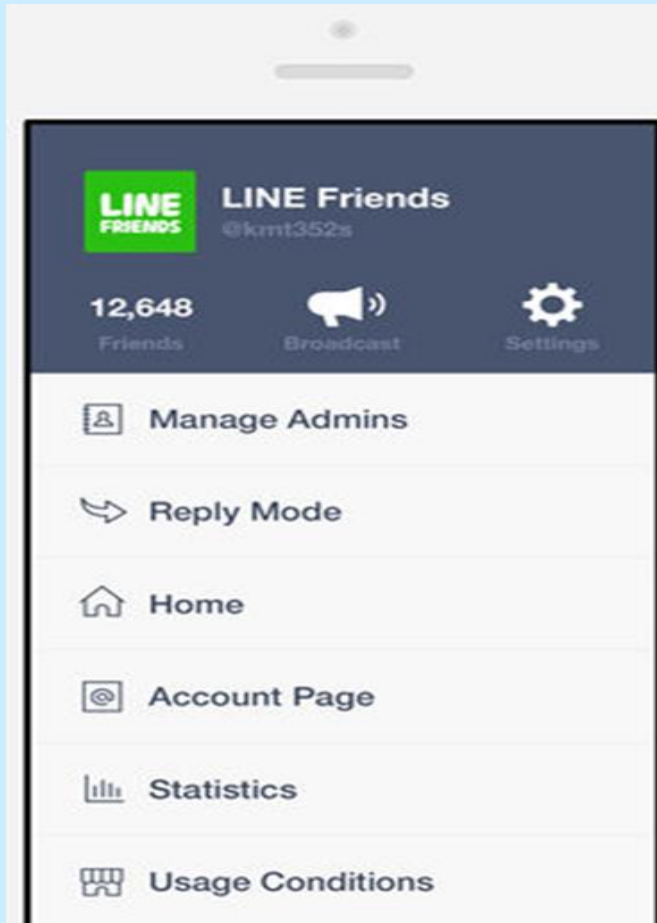


Cardiothoracic surgery department in two university hospital in Bangkok, Thailand



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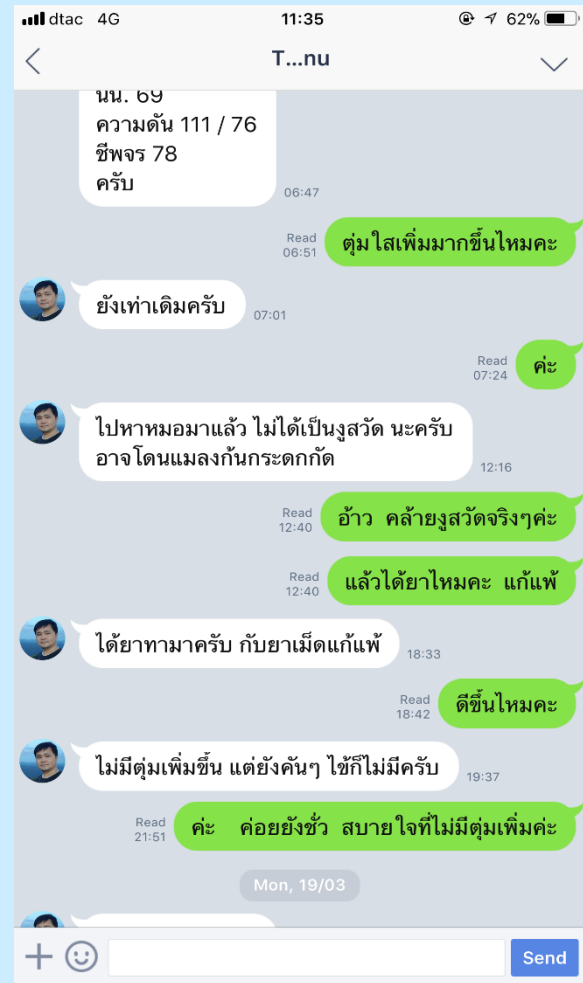
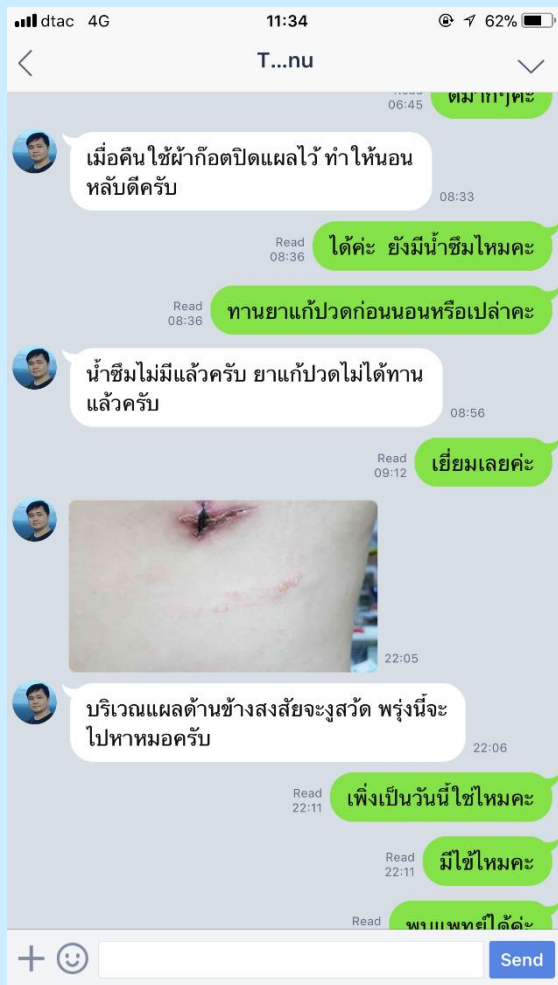
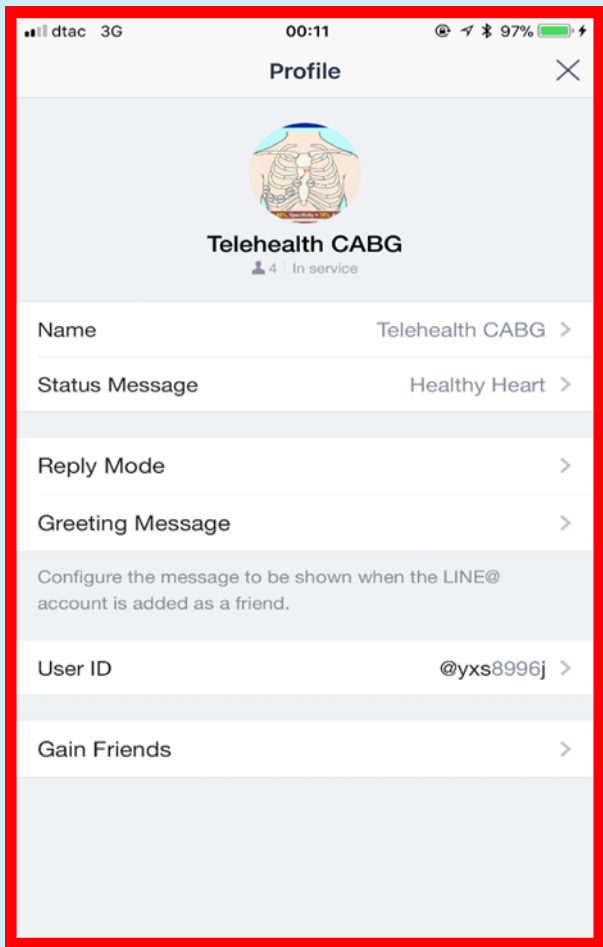
Application line@





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Data transmission via line@ for telehealth team





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Health Data Recorded by the Patients

วันที่ 7 15/11/61	ทานยาแก้ปวด 1 เม็ด ตอนนอน พารา ความดันโลหิต เข้า 133/71 มม.ปรอท ขึ้น 109/59 มม.ปรอท ชีพจร เข้า 85 ครั้งนาที ขึ้น 91 ครั้งนาที น้ำหนักตัวก่อนอาหารเช้า 50.9 กิโลกรัม 36.6 เวลาในการเดินออกกำลังกาย 15 - 15 นาที 36.4
วันที่ 8 16/11/61	ทานยาแก้ปวดตอนนอน 1 เม็ด พารา ความดันโลหิต เข้า 109/59 มม.ปรอท ขึ้น 108/62 มม.ปรอท ชีพจร เข้า 99 ครั้งนาที ขึ้น 84 ครั้งนาที น้ำหนักตัวก่อนอาหารเช้า 50.6 กิโลกรัม 35.9 เวลาในการเดินออกกำลังกาย 20 - 15 นาที 36.4
วันที่ 9 17/11/61	ทานยาแก้ปวด 1 เม็ด แก้แพ้ 1 เม็ด ตอนนอน ความดันโลหิต เข้า 118/63 มม.ปรอท ขึ้น 111/61 มม.ปรอท ชีพจร เข้า 91 ครั้งนาที ขึ้น 85 ครั้งนาที น้ำหนักตัวก่อนอาหารเช้า 50.5 กิโลกรัม 36.4 เวลาในการเดินออกกำลังกาย 10 - 15 นาที 36.5

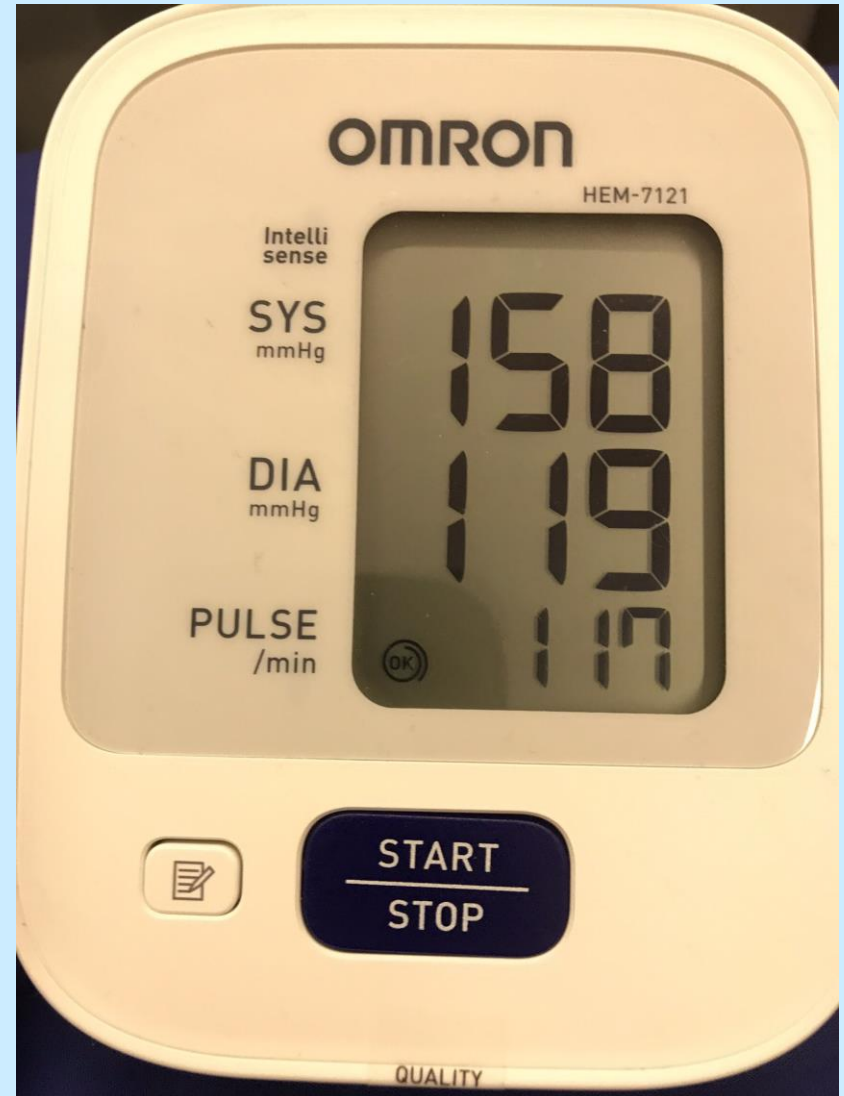
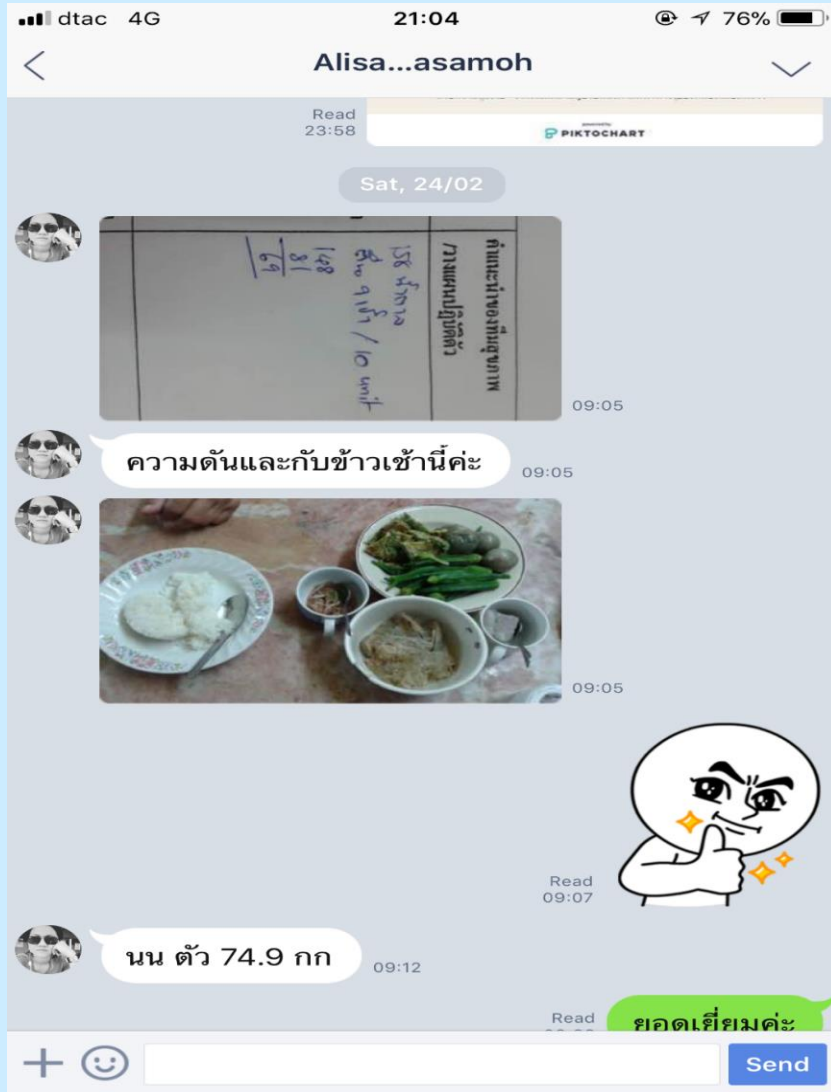
⊗ วันอาทิตย์ อามด อ้วนมาก อดข้าว

22.00 น ความดัน	114/66	96	ช.
	100/60	83	ช.
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จุดวัด H			
ดื่มนม	1 ลิตร		
+ เฉาก๊วย			
วันอาทิตย์ ไม่ทานข้าว อดฟัววัน W			
ชีพจร 16 นมด 61/1	153/99	78	ช
ที่ 5 ๑๖๐	141/83	75	ช
(นี ที่ 2:30 150 CC / ที่ ๕ 4:30 200 CC)			
8:15 น. นม 71			
ความดัน	126/79	87	ช.
	131/104	90	ช 2
	131/82	87	ช 2
เลือด	147		หัวใจขาว



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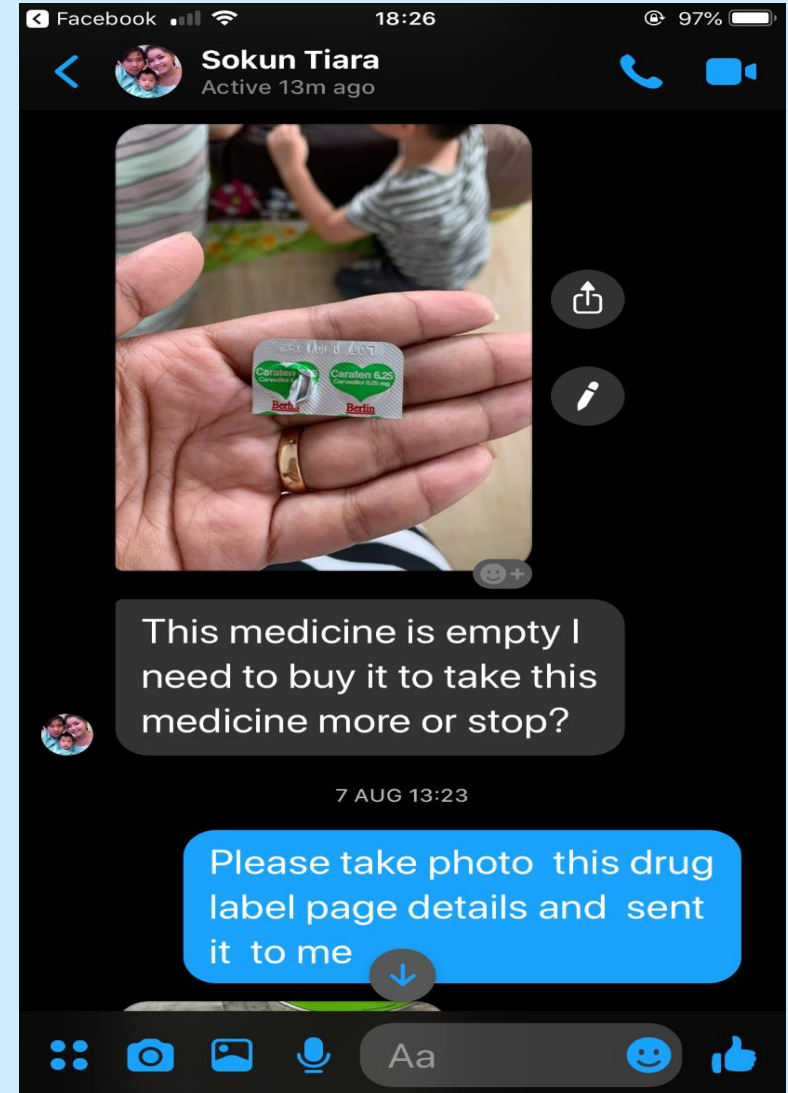
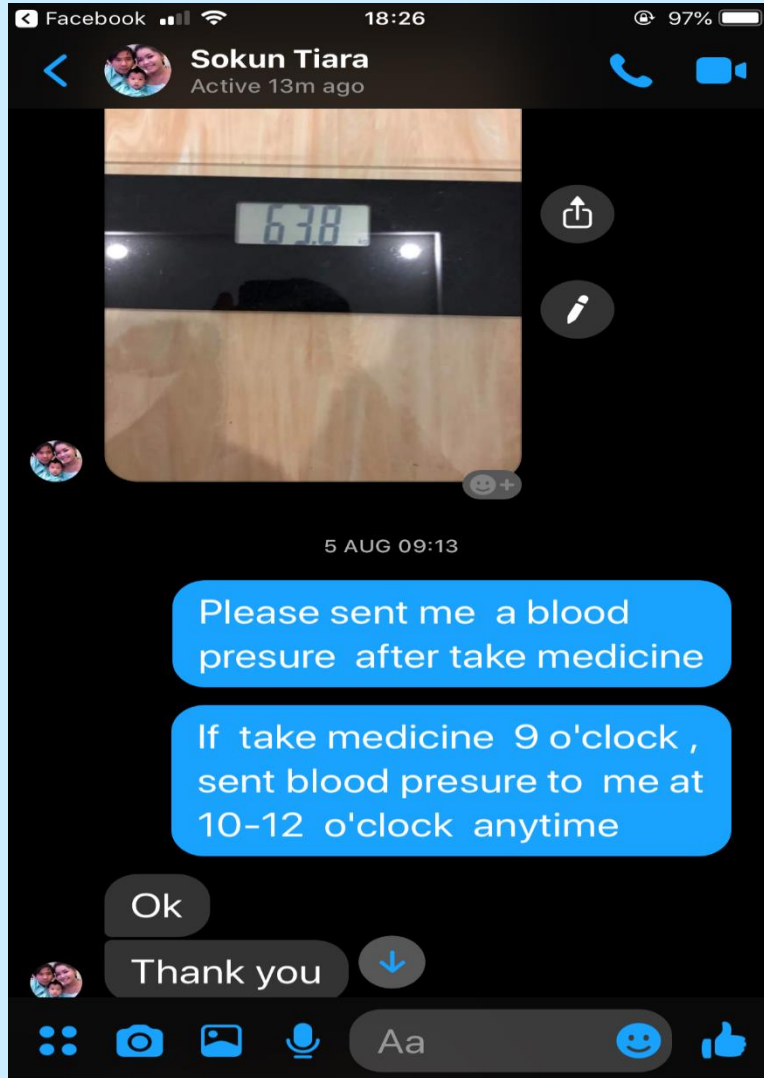
Data transmission via line@ for telehealth team





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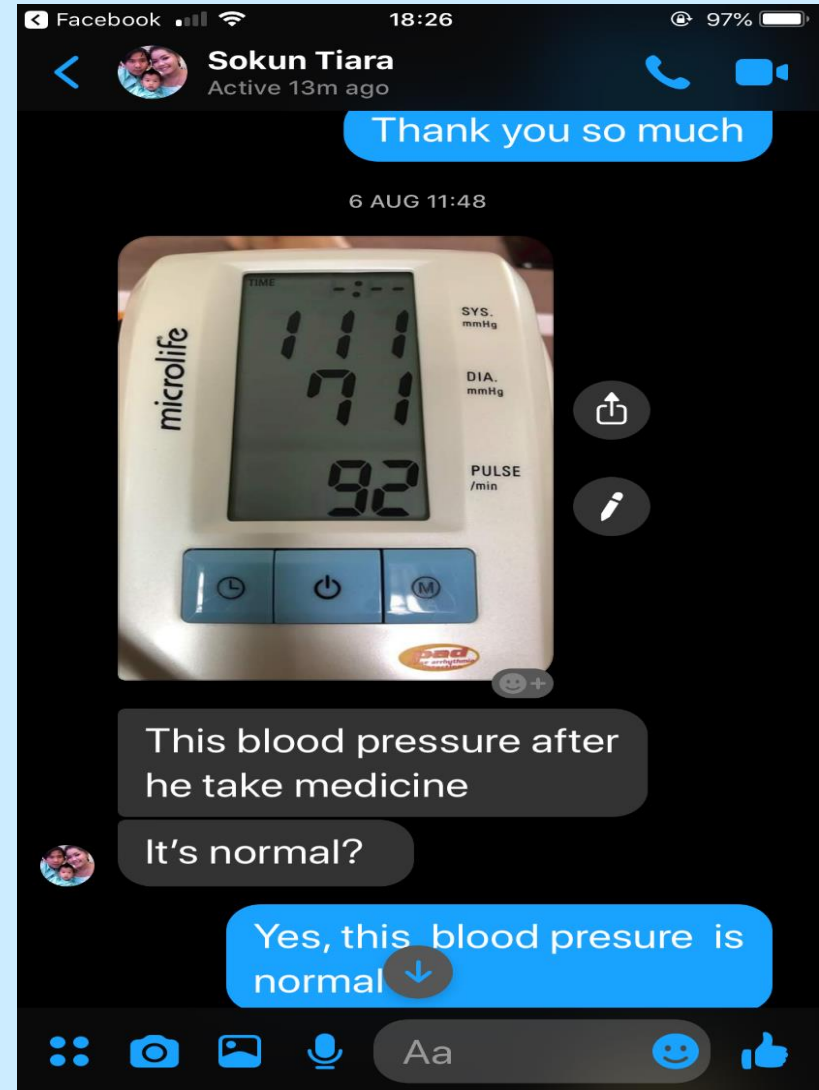
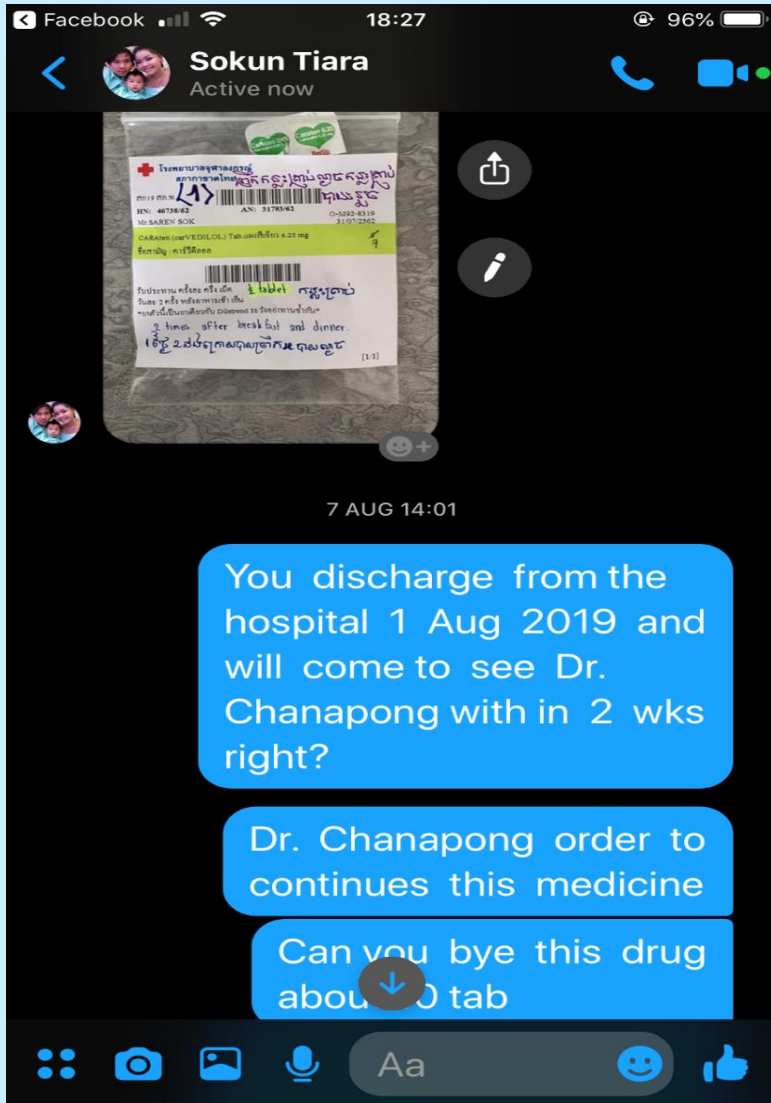
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Notify the patient as the doctor ordered treatment





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Telehealth programs was implemented with CABG patients using application via smartphone during the first month after discharge from hospital in collaborative with multidisciplinary team



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Telehealth program tracks patient by monitoring the pulse, blood pressure, body weight, abnormalities sign and symptom. Telehealth was promoting exercise according to the guidelines for cardiac rehabilitation. Patients sent the health information to nurses via smartphones. Patient information has been analyzed by team and consulted doctor owner.



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The management of patients problem

CASE 1

Patient problem	Management	Outcome
1. Patient weight gain over 3 kg in 1 week with tiredness during exercise.	Researcher reported patient symptoms to medical team, patients receiving diuretics drug 1 tablet daily morning.	Patient weight was reduction from diuretic. Swelling has decreased with no fatigue.



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2

1976 ปี พ.ศ. ๒๕๖๑ (เดือนสิงหาคม)

วันที่	กิจกรรม	เวลา	ปริมาณ	หมายเหตุ
๓๑.๘.๖๑	กลับจาก รพ. จุฬาลงกรณ์	เวลา 13.30 น.	น้ำหนัก 110/63 กก	
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				5 ชม 210 cc
				3.20 am 300 cc
				5.55 am 400 cc
				8.15 am 200 cc
๑.๙.๖๑	เข้า รพ. เวลา	8.30 am	150	
		6 pm	297	
		4 ชม	286	
	รับยา			
				น้ำ 1300 cc
				เม็ด ๓
				น้ำ 100 cc
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				100 cc.
๓.๙.๖๑	เข้า รพ.	8:45	156	
	รับยา		79 kd	
				น้ำ 900 cc
	รับยา 10.10 am			
	น้ำ 100 cc			





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The management of patients problem

CASE 2

Patient problem	Management	Outcome
2. Care giver report to telehealth team that patient has walking disturbance, low blood pressure but normal pulse rate.	Patient was recommended to the emergency department of the hospital.	Patient was done CT scan and admitted at Stroke unit for 1 week then discharged from hospital to home.



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The management of patients problem

CASE 3

Patient problem	Management	Outcome
<p>3. Patient sent the photo of redness at sternum wound site with had some fluid drainage.</p>	<p>Researcher consulted physician by telephone. The physician recommend patient to dressing wound once a day at a clinic nearest home.</p>	<p>Operation wound site was improved.</p>



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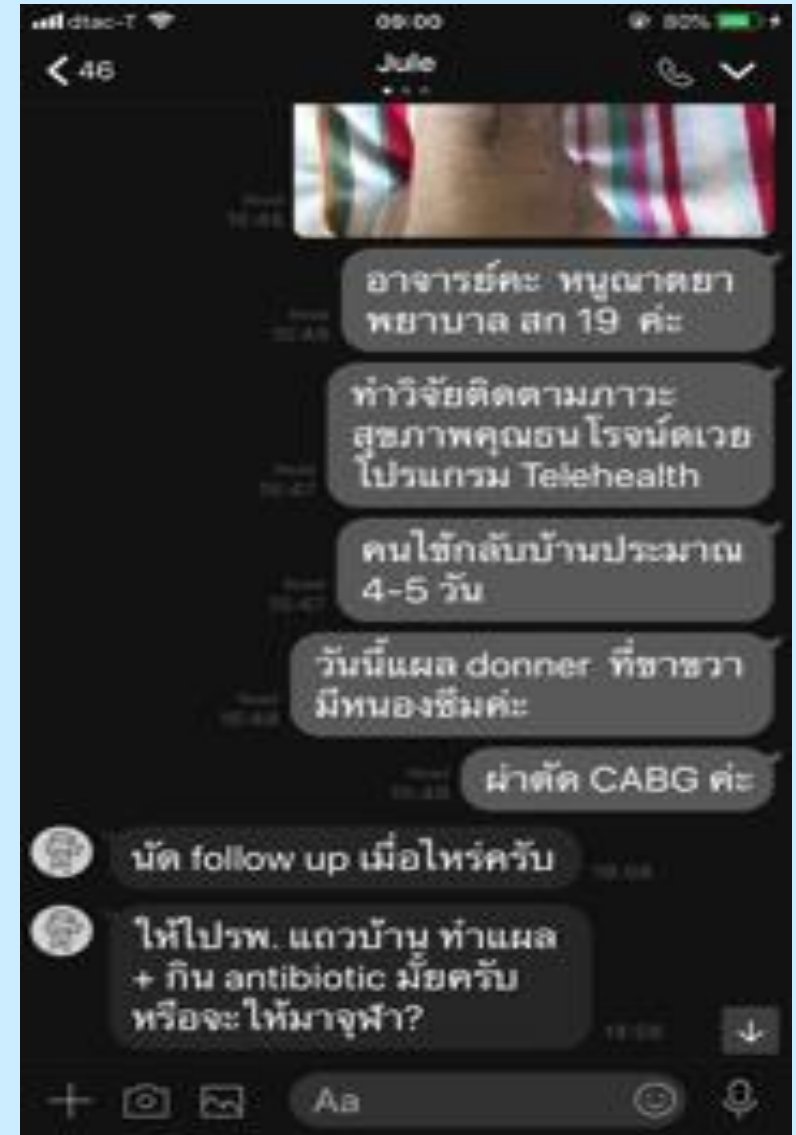
The management of patients problem





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Doctors Response





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The management of patients problem

CASE 4

Patient problem	Management	Outcome
4. Patient sent the photos that shown pus discharge from operation wound left arm.	Researcher reported to the medical team. The doctor gave him an oral antibiotics and recommended that the wound be dressing once a day at a clinic nearest home.	The operation wound was dry and getting normal in 7 day.



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The management of patients problem

CASE 5

Patient problem	Management	Outcome
5. Caregiver called for consult on low peripheral blood sugar (POCT 26 mg%).	Researcher recommended patient to drink milk and repeated the sugar level to 40 mg%. It is recommended that patients need to see doctor at emergency room.	Patient was admit in hospital to adjust blood sugar level for 2 day then he can discharge to home.



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The management of patients problem

CASE 6

Patient problem	Management	Outcome
<p>6. Care giver sent patient data shown that blood pressure was low to 80/50 mmHg. He had slightly dizziness.</p>	<p>Researcher checked the patient's medication found that he had beta-blocker. It's effect to lower blood pressure. (Patients taking caratrend (6.25), one morning and one evening)</p> <ul style="list-style-type: none">- reported to medical team.- The doctor ordered to stop caratrend and see doctor before an appointment with blood taken, chest x-ray done.	<p>- No harm from low blood pressure. Blood pressure returned to normal after stop medication.</p>

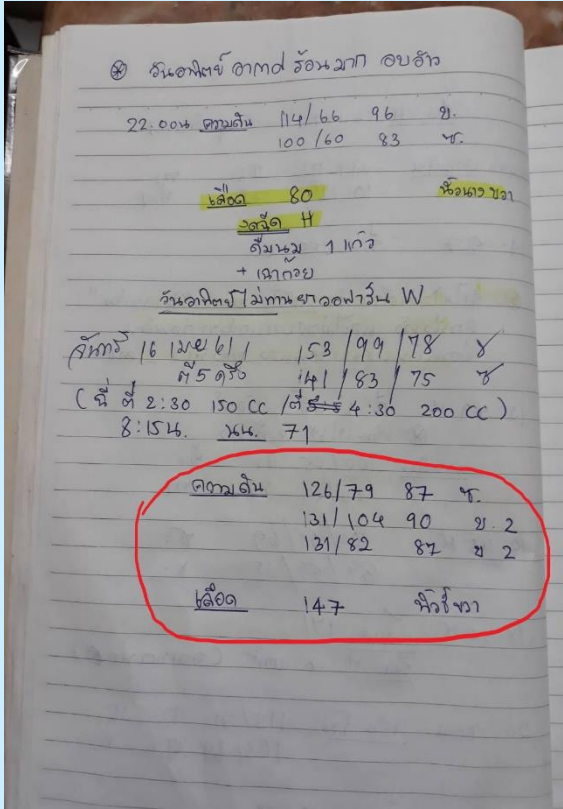
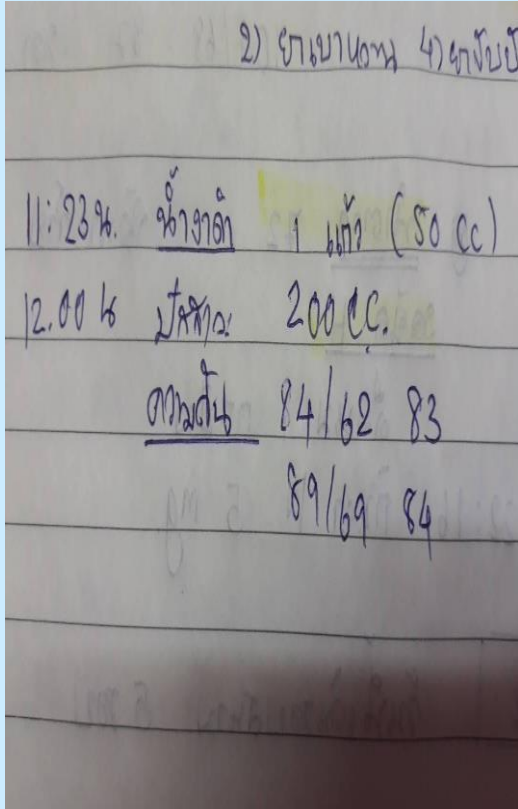


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Telehealth

Cardiac rehabilitation home program





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The management of patients problem

CASE 7

Patient problem	Management	Outcome
7. Patient had presented with difficulty breathing, normal blood pressure.	Researcher advised patient met doctor at emergency department. He received intravenous diuretic.	He was observed sign and symptoms at emergency room then he was discharged to home.



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The management of patients problem

CASE 8

Patient problem	Management	Outcome
8. Patient sent photo with operation wound doner site at right leg had swelling, redness, and it had some discharge drainage from wound.	Researcher notify the doctor. He ordered patient to dressing wounds at the hospital near the home.	It was no infection in the operation wound doner site at right leg.



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The management of patients problem

CASE 9

Patient problem	Management	Outcome
9. Patient had bloody defecation.	<ul style="list-style-type: none">- Researcher checked medication found that he had aspirin (81) 1 tablet daily.- Doctor ordered him to stop aspirin and recommended that he need to see doctor at Gastrointestinal Tract Department	Patient was follow up at Gastrointes- tinal Tract Department. GI bleeding was improved.



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The management of patients problem

CASE 10

Patient problem	Management	Outcome
10. Patient with swelling of the operation wound and around left arm.	Researcher advised patient to lift their arms at bedtime. Researcher notify the medical team.	The swelling of the arm decreases in a few days.



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Early identification of patients' health problem and management was very important and key to successful



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- Most important thank you for Sigma Theta Tau International Honor Society of Nursing for the opportunity.



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*Thank you for
your attention!*