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).
Coronary Artery Bypass Graft
A major surgery for CAD

- Depression
- Pain
- Self-efficacy
- Functional status
- Impaired cardiac status
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
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).
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.
Following the Telehealth Program

Telehealth

- Prepare the patient to use the line @ application
- Prepare the patient to self-monitor exercise, blood pressure, heart rate, body weight and symptoms.
- Monitor, Offer Consultation, Educate Patients.

Follow up on cardiac rehabilitation.
- Awareness through the LINE @ application.
- Health information via the LINE @ application.
- Self-assessment of health status.
- Health promotion through the LINE @ application

- Self efficacy
- Ability in exercise
- Functional Status
- Rehospitalization Rate
Setting data

Cardiothoracic surgery department in two university hospital in Bangkok, Thailand
Application line @
Data transmission via line@ for telehealth team
## Health Data Recorded by the Patients

### Patient Data

#### Weight
- 22.50 kg
- 14/04/66
- 9.6
- 92

#### Blood Pressure
- 100/80
- 83

#### Body Temperature
- 36.4
- 1

#### Pulse
- 80

<table>
<thead>
<tr>
<th>Date</th>
<th>Temperature</th>
<th>Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>22/04/66</td>
<td>9.6</td>
<td>92</td>
</tr>
<tr>
<td>10/04/66</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- The patient's condition is stable.
- Monitor blood pressure regularly.
- Consult with a doctor if symptoms persist.

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**Medical Notes:**

- Patient's symptoms: Normal
- Treatment: Continue current medication
- Next appointment: 15/04/66

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**Diagnosis:**

- Hypertension
- Normal body temperature

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**Patient's Progress:**

- Blood pressure has stabilized.
- Continue dietary changes suggested.
- Monitor for any changes in symptoms.
Data transmission via line@ for telehealth team
Data transmission via line@ for telehealth team

5 AUG 09:13

Please sent me a blood pressure after take medicine

If take medicine 9 o'clock, sent blood pressure to me at 10-12 o'clock anytime

Ok

Thank you

This medicine is empty I need to buy it to take this medicine more or stop?

7 AUG 13:23

Please take photo this drug label page details and sent it to me
Notify the patient as the doctor ordered treatment

You discharge from the hospital 1 Aug 2019 and will come to see Dr. Chanapong with in 2 wks right?

Dr. Chanapong order to continues this medicine

Can you bye this drug about 5 tab

This blood pressure after he take medicine

It’s normal?

Yes, this blood pressure is normal
Telehealth programs was implemented with CABG patients using application via smartphone during the first month after discharge from hospital in collaborative with multidisciplinary team.
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.
# CASE 1

<table>
<thead>
<tr>
<th>Patient problem</th>
<th>Management</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient weight gain over 3 kg in 1 week with tiredness during exercise.</td>
<td>Researcher reported patient symptoms to medical team, patients receiving diuretics drug 1 tablet daily morning.</td>
<td>Patient weight was reduction from diuretic. Swelling has decreased with no fatigue.</td>
</tr>
</tbody>
</table>
Data transmission via line@ for telehealth team
### CASE 2

<table>
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<tr>
<th>Patient problem</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2. Care giver report to telehealth team that patient has walking disturbance, low blood pressure but normal pulse rate.</td>
<td>Patient was recommended to the emergency department of the hospital.</td>
<td>Patient was done CT scan and admitted at Stroke unit for 1 week then discharged from hospital to home.</td>
</tr>
<tr>
<td>Patient problem</td>
<td>Management</td>
<td>Outcome</td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>3. Patient sent the photo of redness at sternum wound site with had some fluid drainage.</td>
<td>Researcher consulted physician by telephone. The physician recommend patient to dressing wound once a day at a clinic nearest home.</td>
<td>Operation wound site was improved.</td>
</tr>
</tbody>
</table>
The management of patients problem
อาการยังคง คนไข้ ซื้อคุณ ชุดขาว ผ่าตัด CABG กลับบ้าน 31 วันก่อน

ผิดทำแผล ปากดีครับ

คงอาการ

ให้ทาน dicloxacillin 250mg1x4

พบพระคุณคงอาการ
**CASE 4**

<table>
<thead>
<tr>
<th>Patient problem</th>
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</tr>
</thead>
<tbody>
<tr>
<td>4. Patient sent the photos that shown pus discharge from operation wound left arm.</td>
<td>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.</td>
<td>The operation wound was dry and getting normal in 7 day.</td>
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</table>
Data transmission via line@ for telehealth team
# The management of patients problem

## CASE 5

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<tbody>
<tr>
<td>5. Caregiver called for consult on low peripheral blood sugar (POCT 26 mg%).</td>
<td>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.</td>
<td>Patient was admit in hospital to adjust blood sugar level for 2 day then he can discharge to home.</td>
</tr>
</tbody>
</table>
# CASE 6

**Patient problem**

6. Care giver sent patient data shown that blood pressure was low to 80/50 mmHg. He had slightly dizziness.

**Management**

- 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)
- reported to medical team.
- The doctor ordered to stop caratrend and see doctor before an appointment with blood taken, chest x-ray done.

**Outcome**

- No harm from low blood pressure.
- Blood pressure returned to normal after stop medication.
Cardiac rehabilitation home program

Data transmission via line@ for telehealth team

Telehealth
### CASE 7

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</thead>
<tbody>
<tr>
<td>7. Patient had presented with difficulty breathing, normal blood pressure.</td>
<td>Researcher advised patient met doctor at emergency department. He received intravenous diuretic.</td>
<td>He was observed sign and symptoms at emergency room then he was discharged to home.</td>
</tr>
</tbody>
</table>
**The management of patients problem**

**CASE 8**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>8. Patient sent photo with operation wound doner site at right leg had swelling, redness, and it had some discharge drainage from wound.</td>
<td>Researcher notify the doctor. He ordered patient to dressing wounds at the hospital near the home.</td>
<td>It was no infection in the operation wound doner site at right leg.</td>
</tr>
</tbody>
</table>
Data transmission via line@ for telehealth team
## CASE 9

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>9. Patient had bloody defecation.</td>
<td>- Researcher checked medication found that he had aspirin (81) 1 tablet daily.</td>
<td>Patient was follow up at Gastrointestinal Tract Department. GI bleeding was improved.</td>
</tr>
<tr>
<td></td>
<td>- Doctor ordered him to stop aspirin and recommended that he need to see doctor at Gastrointestinal Tract Department</td>
<td></td>
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</table>
# CASE 10

## Patient problem

10. Patient with swelling of the operation wound and around left arm.

## Management

- Researcher advised patient to lift their arms at bedtime.
- Researcher notify the medical team.

## Outcome

The swelling of the arm decreases in a few days.
Early identification of patients’ health problem and management was very important and key to successful
References


Acknowledge and thanks

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- the Faculty of Nursing, Faculty of graduate Mahidol University
- Most important thank you for Sigma Theta Tau International Honor Society of Nursing for the opportunity.
Thank you for your attention!