Interior Health
Every person matters

Coronary Angiogram / Angioplasty

What You Need to Know
A Patient and Family Guide



Interior Health Authority
Regional Cardiac Catheterization Lab

Kelowna General Hospital
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Adapted with permission from Vancouver Coastal Health 2009

Why am I having a Coronary Angiogram?

A coronary angiogram is a test that checks the blood flow to the heart muscle. The Doctor may order this if you have had any of the following: -

- A heart attack
- Chest pain
- Chest tightness or discomfort
- Pains in the jaw, throat or shoulders
- Shortness of breath
- Irregular heart beats
- Heart murmur (heart valve problems)
- Heart failure (weakened heart muscle)
- A referral for a solid organ transplant

What is a Coronary Angiogram?

An Angiogram is a procedure where contrast dye is injected into the arteries of the heart while x-ray pictures are taken. The dye will show whether there are any narrowing or blockages in your coronary (heart) arteries. An artery is a blood vessel that carries blood from the heart to the body tissues and organs. The Angiogram will take place in the Cardiac Catheterization Lab (Cath Lab).

Before your appointment please watch the informed consent DVD
https://www.youtube.com/watch?v=MtHdzio54-E
or
http://bit.ly/Angiograms

Treatment options

After your angiogram your results will be known immediately. These results will be explained to you and your treatment care plan will be discussed with you. This could be one of the following or a combination of them:

- Medications
- Angioplasty (STENTS) – described on page 3
- Coronary Artery Bypass Surgery – Bypass surgery is used to get blood flow to part of you heart muscle when your arteries are blocked
- Heart Valve Surgery – to replace or repair the poorly working heart valve
- Implantable Cardioverter defibrillator (ICD) – An ICD is a device that helps people with dangerously irregular heart rhythms

What is an Angioplasty?

Angioplasty is the next step after an angiogram, this might be done in a later appointment. This procedure used to open an artery that has become narrowed or blocked by deposits in the artery wall. The cardiologist inserts a catheter (tube) through either the groin (femoral) or wrist (radial) up to the coronary (heart) arteries. A small metal stent (see picture) is then permanently placed in the artery to help keep the artery open and relieve your angina symptoms.



Directions and Maps

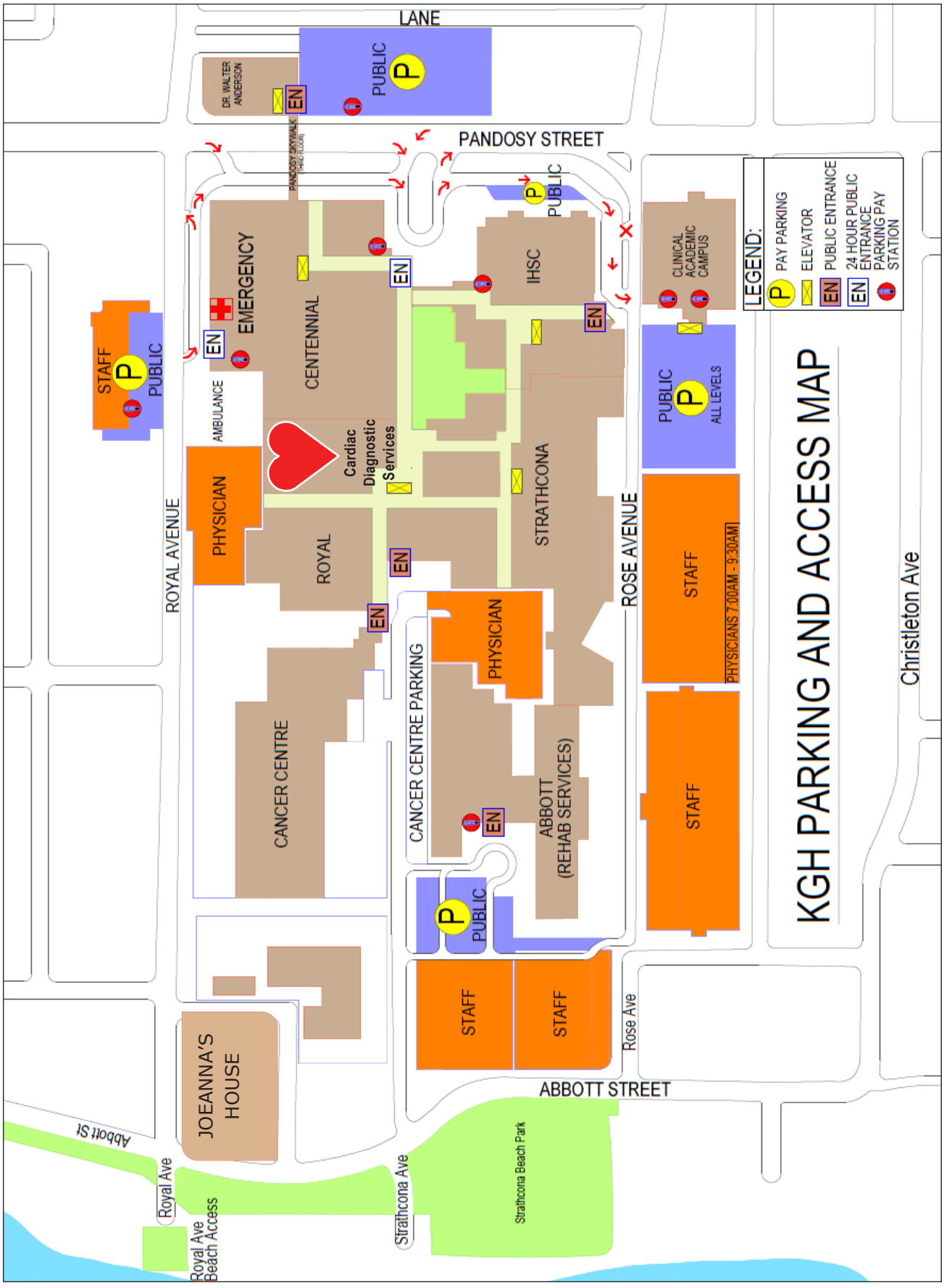
The Regional Cardiac Catheterization Lab is located in Kelowna General Hospital on the main floor of the Royal Building.

Kelowna General Hospital is located close to downtown Kelowna. If you are driving from Vernon (South on Hwy 97), turn left on to Pandosy Street. If you are driving from Penticton (North on Hwy 97), turn right on to Pandosy Street. The hospital is located at the intersection of Rose Avenue and Pandosy Street.

The main hospital entrance is located on Pandosy between Royal Avenue and Rose Avenue where there is a drop off car loop for your accompanying person to drop you off while they park (see EN on Map).

Public parking is located around the hospital campus (see Ⓟ on the Map). Enter at closest Public Entrance (see EN on map) and follow signs for Royal Building to the Cardiology Reception ♥ or ask a hospital volunteer (dressed in Red Coats and located throughout the facility).

Approximate cost for parking per day: $6.00. Please allow time for parking.


KGH PARKING AND ACCESS MAP
LEGEND:
PAY PARKING
ELEVATOR
PUBLIC ENTRANCE
24 HOUR PUBLIC ENTRANCE
PARKING PAY STATION
LANE
PANDOSY STREET
DR. WALTER ANDERSON
PUBLIC
EN
PANDOSY SKYWALK
EMERGENCY
CENTENNIAL
IHSC
CLINICAL ACADEMIC CAMPUS
STAFF
PUBLIC
AMBULANCE
PHYSICIAN
ROYAL
Cardiac Diagnostic Services
STRATHCONA
ALL LEVELS
ROYAL AVENUE
ROSE AVENUE
CANCER CENTRE
CANCER CENTRE PARKING
PHYSICIAN
ABBOTT (REHAB SERVICES)
PHYSICIANS 7:00AM - 9:30AM
JOEANNA'S HOUSE
ABBOTT STREET
Rose Ave
Christleton Ave
Abbott St
Royal Ave
Royal Ave Beach Access
Strathcona Ave
Strathcona Beach Park

Cardiovascular Coordinator

The Cardiovascular Coordinator is a Registered Nurse who works with the medical team reviewing your referral and test results.

The Cardiovascular Coordinator will arrange the following:

- timing of your test with the guidelines set by Cardiac Services British Columbia
- additional tests that you may require
- advise you on any changes to your medications

As an outpatient you will be called directly by the Cardiovascular Coordinator or booking clerk, as an inpatient your primary nurses will be advised as to your care plan.

Preparation Instructions for your Angiogram

You may be required to attend appointments for blood work and x-ray. If you have not followed these instructions, your angiogram may be cancelled or rescheduled.

If you are First Nations status and require medical documentation, please contact the Cardiovascular Coordinator to help you.

Medications

- Your doctor or nurse may advise you to stop, or adjust, some of your medications before the procedure.
- Please bring **all** your medications in their original bottles. This includes prescription and non-prescription drugs, vitamins, and herbal products.

Valuables & Personal Belongings

- The hospital will not accept responsibility for keeping your valuables safe. Do not bring valuables or a lot of personal items and clothing.

Food / Fluid

- Up to 6 hours before your procedure, you may have a light meal (e.g. toast, clear soup).

What to Bring

- Form of picture ID (eg. Driver's License)
- Credit Card or cash for transportation, as needed
- BC Services Card (Care Card)
- A friend or relative that can look after you for 24 hours afterwards

Planning for Going Home

When you come to Kelowna General Hospital from home:

You are not allowed to drive following the procedure.

Driving Restrictions:

  - If you had an angiogram only, you are not allowed to drive for a minimum of 24 hours following the procedure.
  - If you had an angioplasty, you are not allowed to drive for a minimum of 48 hours following the procedure.
  - Depending on the reason for your procedure, you may be given different driving restrictions other than those listed above.
- A responsible adult must meet you in the recovery area of the Cath Lab to assist you in going home. If you cannot arrange this, please let the Cardiovascular coordinator know as your procedure may have to be re-booked. This person needs to be in the Cath Lab for 30 minutes before you go home.
- For your safety, someone MUST stay with you overnight, preferably the person who picked you up and received discharge instructions.
- If you live more than 50 kms from Kelowna, you will need to make arrangements to spend the night in the Kelowna area.
- Some accommodations near the hospital provide a "medical rate" please inquire when you are booking.

When you come to Kelowna General Hospital from another hospital:

- You may be admitted to Kelowna General Hospital and when discharged, you will be required to arrange your own transportation home.

OR

- You may be transferred back to your home hospital via ambulance if you still require hospital care.

When you arrive at the Cath Lab

- You will be asked:
  - to change into a hospital gown, removing all clothing including undergarments.
  - to give a detailed medical history including medications, allergies to x-ray dye, iodine, shellfish, olive oil, eggs, or dental freezing, etc.
- Current body weight, ECG, and chest X-ray will be reviewed and completed as necessary.
- An intravenous (IV) will be inserted for fluids and/or medications.
- You will meet with the cardiologist prior to the procedure to assess whether the procedure will be through the groin or wrist.
- The nurse will use clippers to remove the hair in preparation for the angiogram. The areas clipped may include: both groins and/or wrists.
- You may be shown a teaching video about the angiogram and/or angioplasty if you have not already viewed it.

During the Angiogram or Angioplasty You Can Expect

- You may walk or be taken in by stretcher to the procedure room
- To be awake.
- To lie flat on an x-ray table while staff prepare equipment around you.
- To have the skin of the wrist and groin areas cleaned with a solution. The area will be draped with a sterile (germ-free) sheet. The team respect your privacy at all times.
- The team will give you instructions when getting you ready for your test.
- The cardiologist will then:
  - inject freezing into the groin or wrist area. Once the area is frozen, a tube will be placed into the chosen artery.
  - guide a small catheter up to your heart through this tube and inject dye to see the arteries on your heart. At some point during your angiogram, you may feel a warm sensation through your mid-section – this is normal.
  - ask you to hold your breath or give a deep cough.
- The procedure will last approximately 45 minutes.
- It is normal to feel some mild discomfort during the angiogram.

Please **tell the Cardiologist** if you are uncomfortable or having pain.

What Happens Immediately After My Angiogram / Angioplasty?

Please watch the after your angiogram DVD:
https://www.youtube.com/watch?v=jOV1MqdmaGE&t=10s

- Video to watch **after** my angiogram:
  Cath Lab Recovery Video:
  http://bit.ly/CathLabRecovery

You will be taken to the recovery area, connected to a heart monitor and your blood pressure, pulse and heart rhythm will be checked regularly. Recovery time will be approximately 4 hours. Your care providers will monitor the puncture site carefully.

The tubes will be removed from the groin or wrist and a dressing or pressure device will be applied to that area. This requires firm pressure to be applied over the puncture site and held until there is no bleeding seen.

- **If the groin (femoral) artery was used**, your groin will be looked at and your pulses will be felt often in both your groin and feet. This is normal care after this procedure. You will be asked to lay flat and still for 2 hours following your procedure. Then you will stay in the Cath Lab for a further 2 hours.
- **If the wrist (radial) artery was used**, your hand and lower arm will be checked often. A secure band will be on your wrist stopping the bleeding. You will be asked not to bend your wrist, carry things or lean on this arm or hand for 24 hours.

To lower your risk of bleeding or complications, you will be given clear instructions on safety, movement and positioning listed in the next section.

How to Exit the Bed After a Femoral Angiogram

Step 1.

Lying flat



Step 2.

Bend knee of the unaffected leg



Step 3.

Place your hand next to head



Step 4.

Push off the mattress and move legs to the side of the bed



Step 5.

Push with your hands to be in the sitting position





Step 6.

Slide forward to the edge of the bed



Step 7.

Standing upright place hand over the groin puncture site



Step 8.

Sitting in a chair, lean back, extend the leg to keep it straight and take pressure of the area

What Do I Watch For After the Procedure?

Contact A Health Care Provider If:

- You have a fever or chills.
- You have redness, swelling, or pain around your insertion site.
- You have fluid or blood coming from your insertion site.
- The insertion site feels warm to touch.
- You have pus or a bad smell coming from your insertion site.
- You have increased bruising around the insertion site.
- You see blood collecting in the tissue around the catheter site (hematoma). The hematoma may be painful to the touch.

Get Help Right Away If:

- You have severe pain at the insertion area.
- The catheter insertion area swells very fast.
- The catheter insertion area is bleeding, and the bleeding does not stop pressure on the area.
- If the catheter insertion site was your groin-if your leg on the catheter insertion site becomes pale, cool, tingly, or numb.

These symptoms may represent a serious problem that is an emergency. Do not wait to see if the symptoms will go away. Get medical help right away. Call your local emergency services (911) Do not drive yourself to the hospital.

What Can I Do When I Get Home?

Activity	For the first 5 days, **DO NOT** lift items over 5 pounds. Avoid prolonged bending or straining. After 5 days, you may return to your normal activities.
Hygiene	After 24 hours, you may remove the hospital dressing and shower. Do NOT bathe / hot tub for 3 days. Note: Your skin may look pink because it was cleaned with a pink solution.
Driving	If you have had a heart attack, ask your doctor or nurse when you can resume driving.
Return to Work	If you have had a heart attack, ask your doctor when you should return to work.
Diet	Resume a heart healthy diet once you go home. Canada Food Guide https://food-guide.canada.ca/en/ It is recommended that you ask your family doctor for a referral to a dietitian. https://www.heartandstroke.ca/

Medication Information

You may go home with new medications for your heart.

Continue to use your regular medications unless you have been told to stop them by the doctor. If you do not know what your medications are, please check with the doctor or nurse before you go home.

It is important to know the names, doses and how often you take all of the medications prescribed to you by your doctor.

Do not stop taking Aspirin (also known as Entrophen / ASA / Acetylsalicylate Acid), Plavix® (Clopidogrel) or Ticagrelor (Brilanta) unless you have discussed it with your "heart" doctor (Cardiologist). Continue taking these medications *for the entire time they have been ordered.*

Discharge Heart Medications

The following is a list of common heart medications that may be prescribed.

Drug Name	Uses
ASA (Aspirin®) Enteric Coated	**Antiplatelet:** Prolongs life, ↓ risk o f heart attack, prevents clots in stents and blood vessels **DO NOT STOP without asking your Cardiologist**
Clopidogrel (Plavix®) Ticagrelor	**Antiplatelet:** Prolongs life, ↓ risk of heart attack, prevents clots in stents and blood vessels. **DO NOT STOP without asking your Cardiologist**
Nitroglycerin	**Vasodilator:** Treats angina
Ramipril (Altace®) Perindopril (Coversyl®) Trandolapril (Mavik)®	**ACE Inhibitor:** Prolongs life, ↓ risk of heart attack, improves heart function, protects the kidneys, ↓ blood pressure
Valsartan (Diovan®) Candesartan (Atacand®) Telmisartan (Micardis®) Losartan (Cozaar®)	**ARB:** Prolongs life, ↓ risk of heart attack, improves heart function, protects the kidneys, ↓ blood pressure
Metoprolol (Lopressor®) Bisoprolol (Monocor®) Carvedilol (Coreg®)	**Beta Blocker:** Prolongs life, ↓ risk of heart attack, improves heart function, ↓ blood pressure and heart rate, prevents angina
Atorvastatin (Lipitor®) Simvastatin (Zocor®) Rosuvastatin (Crestor®)	**Statin:** ↓ cholesterol, prolongs life, ↓ risk of heart attack
Furosemide (Lasix®)	**Diuretic (Water pill):** Removes excess fluid from the body, ↓swelling in feet/legs and fluid in the lungs
Amlodipine (Norvasc®)	**Calcium Channel Blocker:** ↓ blood pressure, slows heart rate, prevents angina

Talk with your doctor or pharmacist before taking any herbal supplements.

If you must return to the hospital, always bring your current list of medications and the original medication bottles with you.

What If I Have Chest Pain?

DO NOT IGNORE ANY HEART SYMPTOMS: (e.g. chest pain, pressure, or discomfort)

- Stop what you are doing and sit down.
- If prescribed, take your Nitroglycerin spray every 5 minutes until the pain is relieved. If you still have pain after a total of 3 sprays, **CALL 911. DO NOT drive yourself to the hospital.**

Some Common Feelings

Sometimes people with a heart condition feel

- Sad
- A lack of interest in life
- Anxious
- Nervous
- Down

If you are bothered by these feelings, know that help is available. Your overall health and your heart health will improve if you get help.

See "Stress Management" resources at the end of this booklet.

How Do I Keep This From Happening Again?

Adopting a healthy lifestyle is important to help prevent further development of heart disease. this includes diet, exercise, medications and education.

By placing a stent in the coronary arteries or performing open heart surgery to bypass the blockages, we are not stopping the build up of cholesterol blockages. Every little thing you do will help stop it in it's track.

Smoking

By quitting smoking NOW, your health will start to improve immediately. Quitting smoking will reduce your risk of heart attack by 50% after just 1 year. Call the helpline QUITNOW by phone 1-877-455-2233 or click www.QuitNOW.ca.

Regional Cardiac Rehabilitation Programs

It is recommended that you join the cardiac rehabilitation program in your community. If there is not a program in your community, please discuss this with your family doctor or a physiotherapist. See the contact information on the following page.

Resources

IH Cardiovascular Coordinators

If you have any questions or concerns after your procedure, please feel free to call us.

Tel: 250-862-4300 Ext. 5653
Toll Free: 1-888-877-4442 Ext. 5653

Central Okanagan Diabetes Program
Please refer yourself

(250) 980-1405

Cardiac Education

COACH
(Coach Cardiac Rehab Program)

(250) 763-3433
www.coachkelowna.com

Heart and Stroke Foundation of Canada

Tel: 1-888-473-4636
www.heartandstroke.ca

Directory of Cardiac Rehabilitation Programs
in Canada

https://cacpr.ca

Diabetes Education

Canadian Diabetes Association
Please refer yourself

(250) 980-1405
www.diabetes.ca

Stop Smoking

Quit Now
24 hours a day, 100 languages spoken

Tel: 1-877-455-2233
www.quitnow.ca

Stress Management

Bounce Back
24-hour, semi-automated
Mental Health Information Line

1-866-639-0522
www.bouncebackbc.ca

Canadian Mental Health Association
Kelowna Branch, B.C. Division

Tel: 250-861-3644
Tel: 1-800-555-8222
https://cmhakelowna.com

Healthlink BC

Nurse	24 hours, daily
Pharmacist	5 pm to 9 am, daily
Dietitian	9 am to 5 pm, Monday to Friday

Call 8-1-1
www.healthlinkbc.ca

Follow Up Care

☐ Complete bloodwork 3 to 5 days after your test (to make sure your kidneys are OK after your angiogram)

☐ Make an appointment with your family doctor within 7 days. During this appointment plan of care, angiogram results, catheter insertion site and blood work will be discussed.

☐ Start your medications as explained to you after your angiogram

_____

_____

_____

☐ If your heart symptoms return (i.e. chest discomfort or shortness of breath) See your Family Doctor or go to the Emergency Room

☐ If needed, a follow up appointment with the cardiologist will be scheduled for you.

Summary

- After the procedure, it is common to have some bruising and tenderness at the catheter insertion area.
- After the procedure, it is important to rest and drink plenty of fluids.
- Do not take baths for 3 days . You may shower 24 hours after the procedure
- If the catheter site starts bleeding, from the groin insertion area lie flat and put pressure on the site. If the bleeding does not stop, get help right away. This is a medical emergency.
- If bleeding starts from the wrist puncture site, apply pressure 1 cm above the puncture site, towards the elbow.
- If any of your heart symptoms return (i.e. chest discomfort or shortness of breath), please see your family doctor or go to your local emergency department.

Special thanks to the Patient Voices Network Partners
for their collaboration on this booklet.