

Chronic Illness

- An illness is defined as chronic when it has a latency of 3 months or longer. It impacts upon a person's physical ability and capabilities.
- Ongoing adaptation is required by the patient and their families to deal with the changes in the intensity of the illness.
- An altered health state that will not be cured by a simple surgical procedure or a short course of medical therapy.

Models of care

Shifting Perspectives Model:

- Views chronic illness as an ongoing, continually shifting process where people experience a complex dialectic between the world and themselves
- Considers both the illness & the wellness of the individual
- The Illness in the foreground perspective focuses on the illness, loss and burden of the chronic illness
- Wellness in the foreground perspective focuses on themselves as identity rather than their illness
- The individual is in control of their life not the illness
- The shift occurs in the individuals thinking allowing the individual to focus away from the disease
- Any threat can shift a person back to illness in the foreground especially if the individual isn't self managing their disease

Family Empowerment Model:

- Portrays an interactive intervention process that consists of phases corresponding to the amount of trust and decision making that a family shares with health professionals
- Families interact with each other, nurses and other health care professionals, the healthcare system and their community as they participate in the family empowerment process

Heart Failure (HF)

Definition: Heart has difficulty pumping blood efficiently throughout the body or heart muscle does not pump as much blood as body needs.

Left sided HF: Occurs when the left ventricle is not pumping adequately. This results in a deficiency of oxygen-rich blood that is pumped from the heart to the rest of the body. Leads to RSHF.

Symptoms of left HF

- SOB
- fatigue
- coughing
- Lung congestion (blood and fluid)
- confusion
- cyanosis
- exertional dyspnoea

Right sided HF: Occurs when the right ventricle is not pumping adequately. Causes blood to pool in right atrium and back flow into the body. Decreased blood to lungs. This tends to cause fluid build-up in the veins and oedema in the legs and ankles. Usually occurs as a direct result of left-sided heart failure but can also be caused by severe lung disease or right heart valve disease.

Symptoms of right HF

- ascites
- GI distress
- splenomegaly and hepatomegaly
- weight gain
- peripheral oedema
- distended jugular veins
- increased peripheral venous pressure
- venous pooling

Systolic HF: means that the heart is unable to pump adequate amounts of blood throughout the body during its contraction (the left ventricle loses its ability to contract normally).

Diastolic HF: means the heart muscle is unable to relax fully between contractions and allow enough blood to enter the ventricles (left ventricle loses its ability to relax normally / the heart muscle becomes stiffer than normal). This results in fluid build up and congestion in the

lungs.

Congestive HF (CHF): the ventricles send blood to the organs and tissues; and the atria receive blood as it circulates back from the rest of the body. CHF develops when the ventricles cannot pump blood in sufficient volume, causing congestion in the body's tissues. Blood and other fluids back up inside the lungs, abdomen, liver, and lower body. Most often there's swelling in the legs and ankles, but it can happen in other parts of the body.

Difference between CHF and Chronic HF:

→ Congestive heart failure (CHF) is a condition in which the heart's function as a pump is inadequate to meet the body's needs. As the blood flow out of the heart slows, blood returning to the heart through the veins backs up, causing congestion in the body's tissues.

Abnormal condition that reflects impaired cardiac pumping

→ Chronic heart failure is the inability of the heart to supply sufficient blood flow to meet the body's needs. Since it is chronic, the heart's ability to function is altered for life. Progressive deterioration of heart muscle.

→ Any condition that leads to decrease ability of the heart (pump) to fill with or eject blood

Pathophysiology:

→ When the heart begins to fail mechanisms are activated to compensate for the impair function and maintain cardiac output.

→ Primary compensatory mechanisms include

1. *Frank-Starling mechanism* greater stretch of cardiac muscle fibres → **EFFECT** increase contractility leading to CO → **COMPLICATION** increases myocardial oxygen demand and limited by overstretching.
2. *Neuroendocrine response* (the decrease in CO stimulates SNS and catecholamine release → **EFFECT** HR, BP and contractility as well as increase in vascular resistance and venous return → **COMPLICATION** can be increase in vascular resistance, tachycardia with decreased filling time and CO as well as increase myocardial workload and oxygen demand).
The increase in CO and renal perfusion stimulate renin-angiotensin system → angiotensin stimulates aldosterone release from adrenal cortex → ADH is released from posterior pituitary → atrial natriuretic peptide and B-type natriuretic peptide are released

→ blood flow is redistributed to vital organs (heart and brain). **EFFECT** → vasoconstriction, BP, salt and water retention by the kidneys, increased vascular volume, water excretion inhibited, increased sodium excretion, diuresis, vasodilation, decreased perfusion of other organs and skin/muscles. **COMPLICATIONS** → myocardial workload, renal vasoconstriction, decreased renal perfusion.

3. *Ventricular hypertrophy* (the increase in cardiac workload causes myocardial muscle to hypertrophy and ventricles to dilate. **EFFECT** → contractile force to maintain CO. **COMPLICATIONS** → increase myocardial oxygen demand and cellular enlargement.

→ *Chronic distention* occurs causing ventricular wall to eventually thin and degenerate. Heart muscle may eventually become so large that the coronary blood supply is inadequate, causing ischemia. Less blood delivered to tissues and heart → ischemia and necrosis of myocardium further weaken the already failing heart and cycle repeats.

Risk factors:

→ Overweight/obesity

→ Sedentary lifestyle

→ Alcohol consumption

→ Smoking

→ Genetics

→ Sex

Signs and symptoms:

→ Dyspnoea

→ Chest pain

→ fatigue

→ Tachycardia

→ Nocturia

→ Cough/wheeze/crackles

Treatment

Pharmalogical

ACE Inhibitors 'pril's' eg: perindopril, ramipril

Indication: Hypertension

Mode of action: ACE inhibitors block the conversion of angiotensin I to angiotensin II and also inhibit the breakdown of bradykinin (causes blood vessels to dilate and therefore cause BP to fall). They reduce the affects of angiotension II induced vasoconstriction, sodium retention