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Chronic Heart Failure

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- Diagnosis
- Management
- Pathways and Services

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What is Chronic Heart Failure?

- Heart Failure is a complex clinical syndrome characterised by the reduced ability of the heart to pump blood around the body.
- Clinical syndrome is ‘a typical constellation of physical findings and investigations’.
- Is heart failure easy to diagnose on history alone?

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Some of the conditions that present with similar symptoms include…

- Obesity
- COPD
- Venous insufficiency in lower limbs
- Drug induced fluid retention
- Severe anaemia
- Renal Failure
- Infection

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SENSITIVITY AND SPECIFICITY OF SYMPTOMS IN DIAGNOSING CHRONIC HEART FAILURE

Symptom	Sensitivity (%)	Specificity (%)
dyspnoea	66	52
orthopnoea	21	81
paroxysmal nocturnal dyspnoea	33	76
history of oedema	23	80

The following signs are more specific for heart failure

- raised jugular venous pressure (JVP)
- lateral displacement of the apex beat
- presence of a third heart sound (S3)
- basal crepitations

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Underlying Causes of heart failure

Primary Defect	Examples
Myocardial dysfunction	IHD, DCM, Congenital cardiomyopathies, myocardial disease, eg amyloid
Volume Overload	Aortic or Mitral regurgitation
Pressure Overload	Aortic stenosis, hypertension
Impaired filling	Constrictive Pericarditus, Cardiac tamponade
Arrhythmias	AF
High Output	Throtoxicosis, anaemia

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Symptoms of Heart Failure are not always obvious …

- It is important to take a detailed history of the symptoms which are causing concern.
- To ask specifically about the common symptoms of heart failure which a patient may consider unrelated to their heart.

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For patients with a known history of chronic heart failure and deteriorating symptoms

- Not for suspected heart failure clinic
- Check patient remains on heart failure treatment
- Consider if treatment needs increasing
- Refer to community heart failure nurses
- Consider referring to Heart failure clinic as a new patient

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No known history of heart failure but you suspect heart failure as cause for symptoms?

- Document clinical findings
- Document patient history
- Perform ECG
- Start treatment if appropriate

- Arrange admission if needed
- Arrange Pro BNP nt
- Arrange Chest X-ray
- If Pro BNP nt is raised then refer to Suspected Heart Failure Clinic- on NHS e-referrals

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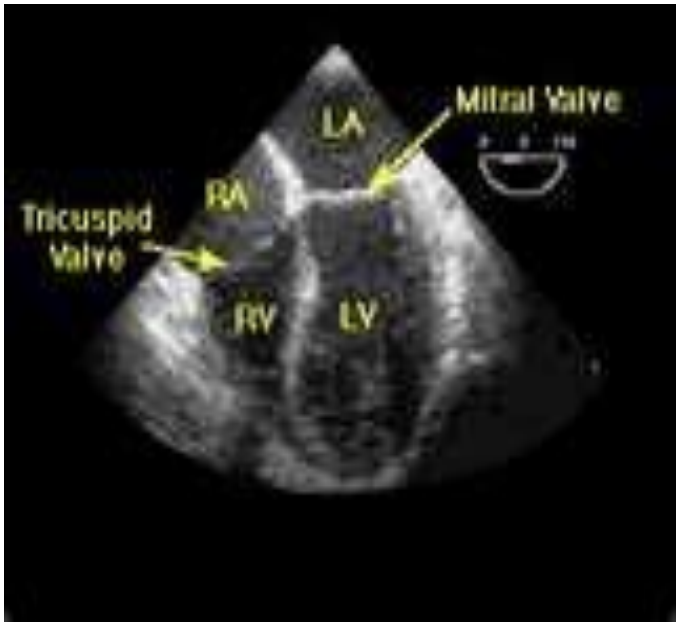
Suspected heart failure clinic

- The aim is for patients with suspected heart failure to be seen within 2 weeks if pro BNP nt is above 2000 ng/l (or 6 weeks if raised but less than 2000ng/l)
- Normal pro BNP nt makes heart failure as a cause for symptoms unlikely.
- Very high pro BNP nt usually leads to admission



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Why the 2 week time frame?

Heart failure is associated with a poorer survival rate than many cancers, including prostate and bladder cancer in men, and breast cancer in women.

- Stewart S; MacIntyre K; Hole DJ, *et al*. More 'malignant' than cancer? Five- year survival following a first admission for heart failure. *Eur J Heart Fail* 2001;3:315-22

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What happens in the suspected heart failure clinic

- Patients have an ECG, Echocardiogram and clinical review.
- They will leave knowing if they have or don't have heart failure.
- Further investigations may be requested in order to identify aetiology.
- Medication may be adjusted.
- Referrals to community heart failure services, other clinician and or follow up clinics will be made if appropriate.
- If not heart failure will be discharged to GP

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Patient case discussion

1- Would you Refer the patient to suspected heart failure clinic?

2- What do you think the outcome was when they attended?

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Patient 1

96 year old lady, short of breath on walking too fast in her house with wheeled walker. Lives independently. No leg swelling, clear lungs, regular rhythm and no murmurs (pro bnp NT 492)

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Patient 2

65 year old lady, short of breath when walking, sitting, eating. Waking suddenly at night short of breath. CXR reported as congestion, history includes DM, obesity, HTN. (Pro bnp NT 13)

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Patient 3

74 year old lady, exhausted last few months, underweight, not SOB, no chest pain or tightness , no leg swelling (pro bnpNT 411)

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Patient 4

76 year old man, SOB cycling up gradient, some tightness in chest on direct questioning. no orthopnoea or PND, no DM, no MI, ex smoker, BMI 28.(pro bnpNT 1000)

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Patient 5

49 year old, no Pro bnp nt requested, chest X-ray showed congestion. No chest pain or tightness, no palpitations. Recent leg swelling. Long history of shortness of breath on exertion gradual deterioration, exercise induced asthma but inhalers no longer helping. Newly diagnosed HTN.

Obesity- BMI 42, Smokes 20/day, ETOH 6 pints strong beer per day (98 units/week)

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Community heart failure nurse referral

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Who to refer to community heart failure nurses?

- Patients with confirmed Chronic Heart Failure.
- Left Ventricular systolic dysfunction on echocardiogram
- Heart Failure with preserved ejection fraction only if referred by a cardiologist with clear plan of care
- Patients with symptomatic heart failure due to systolic dysfunction or patients on sub-optimal treatment
- Patients with recent hospitalisation due to heart failure or new diagnosis of heart failure
- Patients with known heart failure and recent admission for other cause when heart failure treatment may have been stopped or reduced ☹

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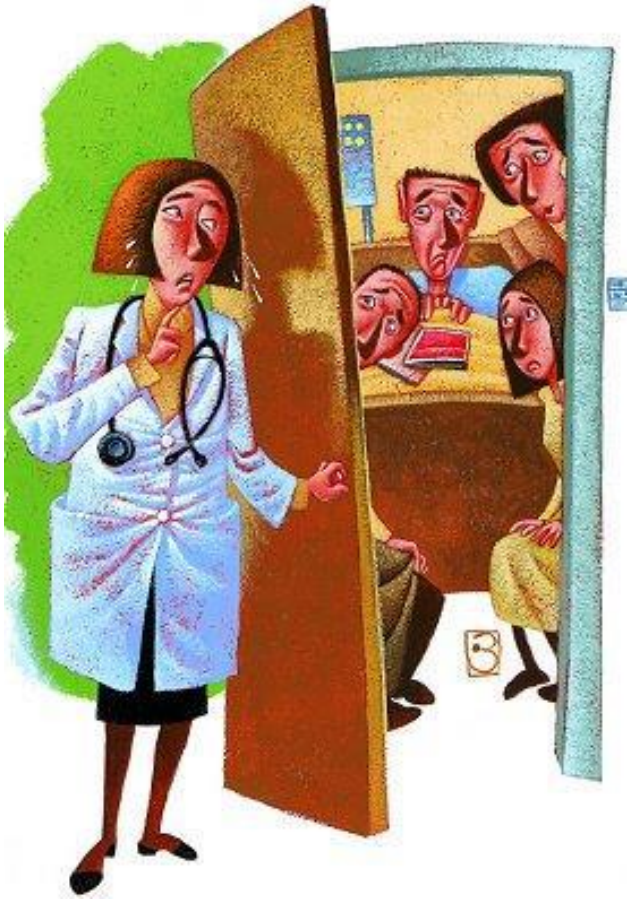
Breaking Bad News…

- Despite discharge summary that says '*heart failure*' patients often do not understand what this means…
- They are often unaware that medications are for life and not a course
- Or that there is no cure
- Or that heart failure is likely to shorten their life
- Or symptoms can be progressive and difficult to control



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Heart Failure Nurses, what do we do, and what is explained to the patients?

- We will optimise treatment and liaise across primary and secondary care
- We will explain what ‘heart failure’ means
- We will explain echo findings and how this relates to their symptoms
- Answer questions re prognosis, ‘will I die from this?’
- Discuss and prescribe the treatment options used to reduce morbidity and mortality.
- Discuss symptoms they may experience, self monitoring and when to seek help
- Discuss medications, their effects, side effects and importance of continuing to take them.
- The reason for titration of medications
- Refer to cardiac rehab when appropriate
- Involve palliative support when appropriate
- Discharge to GP if stable

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Monitoring and assessment- at least every 6 months

Functional capacity
Fluid status
Cardiac rhythm
Cognitive status
Nutritional status
Review of drug treatment
U&Es
ECG
Offer information, education and support to enable self monitoring and knowledge as to what to do in the event of deterioration
Frequency is days to six monthly intervals depending on clinical need

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Some medicines that should be avoided in heart failure…

- Pioglitisone, Rosiglitisone
- Diltiazem
- Verapamil
- Ibuprofen-NSAIDs
- Cough and cold medicines containing pseudoephedrine
- Flecanide
- Dronedarone

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Treatment options

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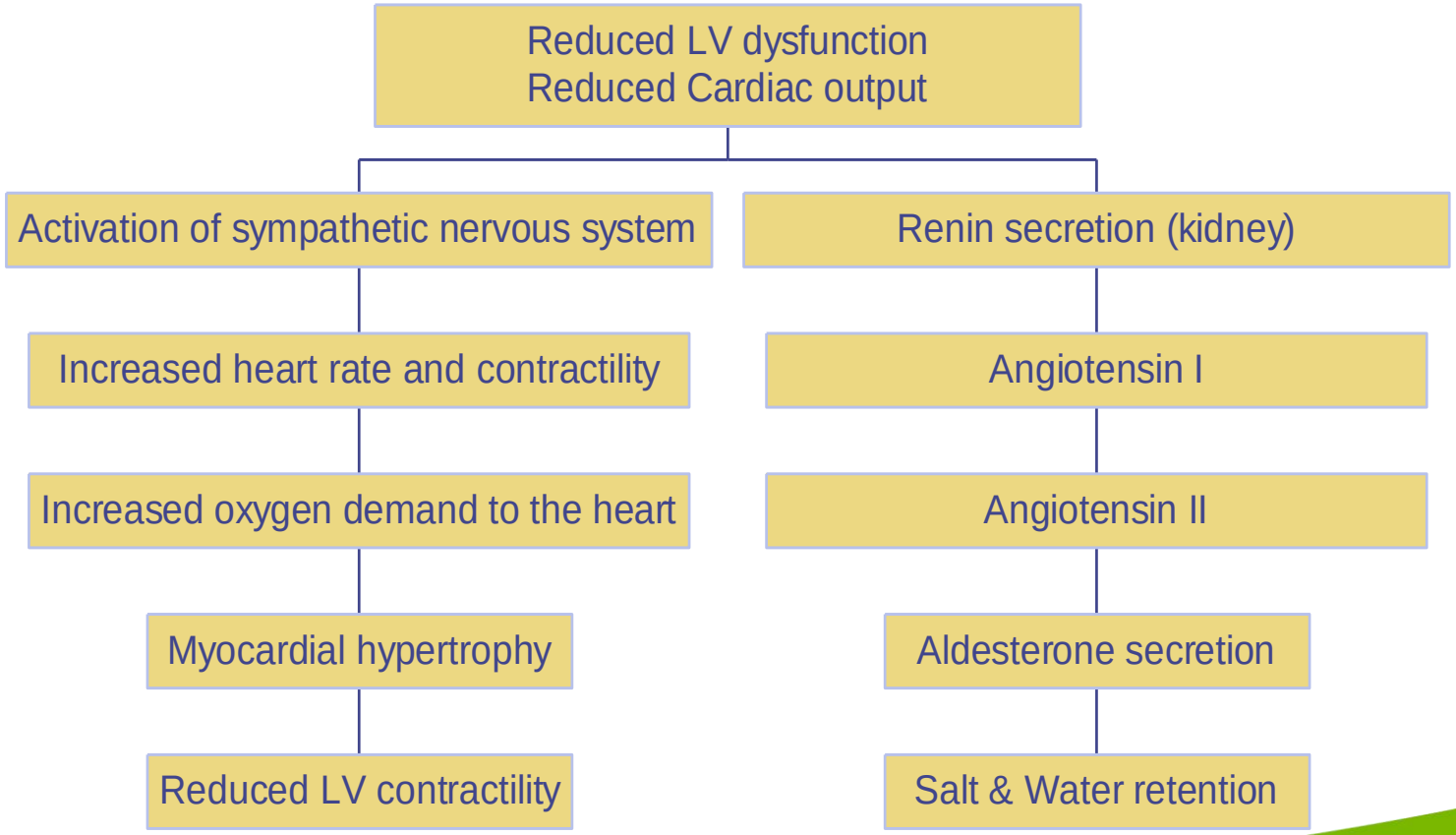
Pathophysiology of heart failure



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ACE Inhibitors

- For all patients with LVSD unless contraindicated
- Reduces both mortality and morbidity
- Use with caution in significant renal disease
- Start at a low dose and titrate every 2 weeks
- Assess patient and repeat renal function between each increase
- Avoid in severe aortic stenosis, bilateral renal stenosis, pregnancy, hyperkalaemia, Angio-oedema
- Continue to target dose if tolerated even in asymptomatic patients with LVSD
- Some worsening in renal function is expected but do consider if diuretics can be reduced, avoid NSAID and stop potassium sparing diuretics.
- If patient has symptomatic hypotension try reducing rather than stopping the medication

- ARB licensed for heart failure (especially in NYHA class II-III)
- hydralazine in combination with nitrate (especially in people of African or Caribbean origin with NYHA class III-IV)

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Entresto

- PARADIGM-HF trial demonstrated that Entresto is superior to ACE-I (Enalapril)
- Trial ended early-
- 20% reduced risk of death or first hospitalisation
- 20% reduced risk of cardiovascular death
- 21% reduced risk of first hospitalisation
- Fewer heart failure symptoms and better quality of life

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NICE Guidelines

- NYHA II-IV
- Left ventricular EF 35% or less
- Who are already taking a stable dose of ACE-I or ARB (**note Entresto MUST NOT be given at the same time as ARB or within 36 hours of ACE-I-washout 48 hours**)
- To be started by a heart failure specialist with access to a multidisciplinary team
- Dose titration and monitoring should be performed by the most appropriate team member

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Beta Blockers licensed in heart failure

- For all patients with LVSD unless contraindicated
- Reduce mortality and morbidity in clinical trials
- Can be used for patients with COPD but are contraindicated if reversible airways disease
- Carvedilol, Bisoprolol, Nebivolol
- ‘Start low, go slow’
- Assess patient and increase every 2 weeks if tolerated
- ECG at time of initiation and as required
- Caution with first-degree heart block
- Contraindicated in higher degree heart block
- Increase to maximum tolerated dose- watching heart rate
- Start when patient is stable
- Only stop if absolutely necessary- consider reduction in dose before stopping avoiding abrupt discontinuation

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Spironolactone/Eplerenone

Aldosterone antagonist licensed for heart failure (especially in NYHA class II–IV or MI in past month)

The recommended monitoring for potassium and creatinine is 1 week after initiation or increase in dose thereafter monthly for the first 3 months, then

quarterly for a year, and then every 6 months.

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Other options…

- Digoxin
- Ivabradine
- Furosemide/Bumetanide
- Metolazone

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What Else?

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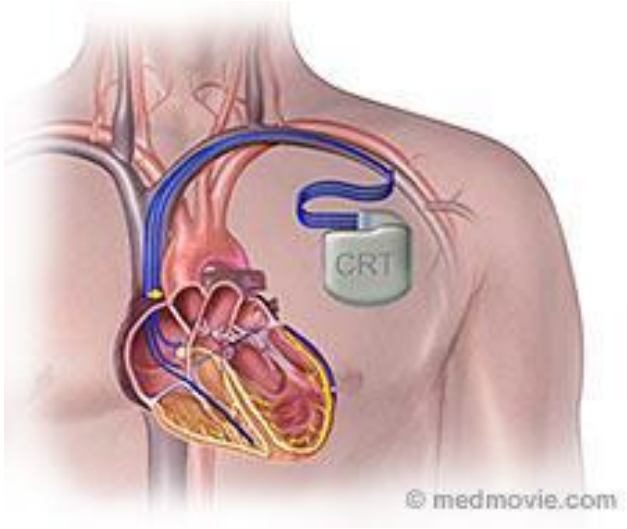
Bi ventricular pace makers

- Leads right ventricle and the coronary sinus vein to pace or regulate the left ventricle.
- Usually (but not always), a lead is also implanted into the right atrium. This helps the heart beat in a more balanced way.
- Traditional pacemakers are used to treat slow heart rhythms. CRT Pacemakers regulate the right atrium and right ventricle to maintain a good heart rate and keep the atrium and ventricle working together. This is called AV synchrony. Biventricular pacemakers add a third lead to help the left ventricle contract at the same time as the right ventricle.



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Rehabilitation

- Supervised exercise group for stable patients
- Psychological and education component
- Classes running at the treatment centre and also at the hospital

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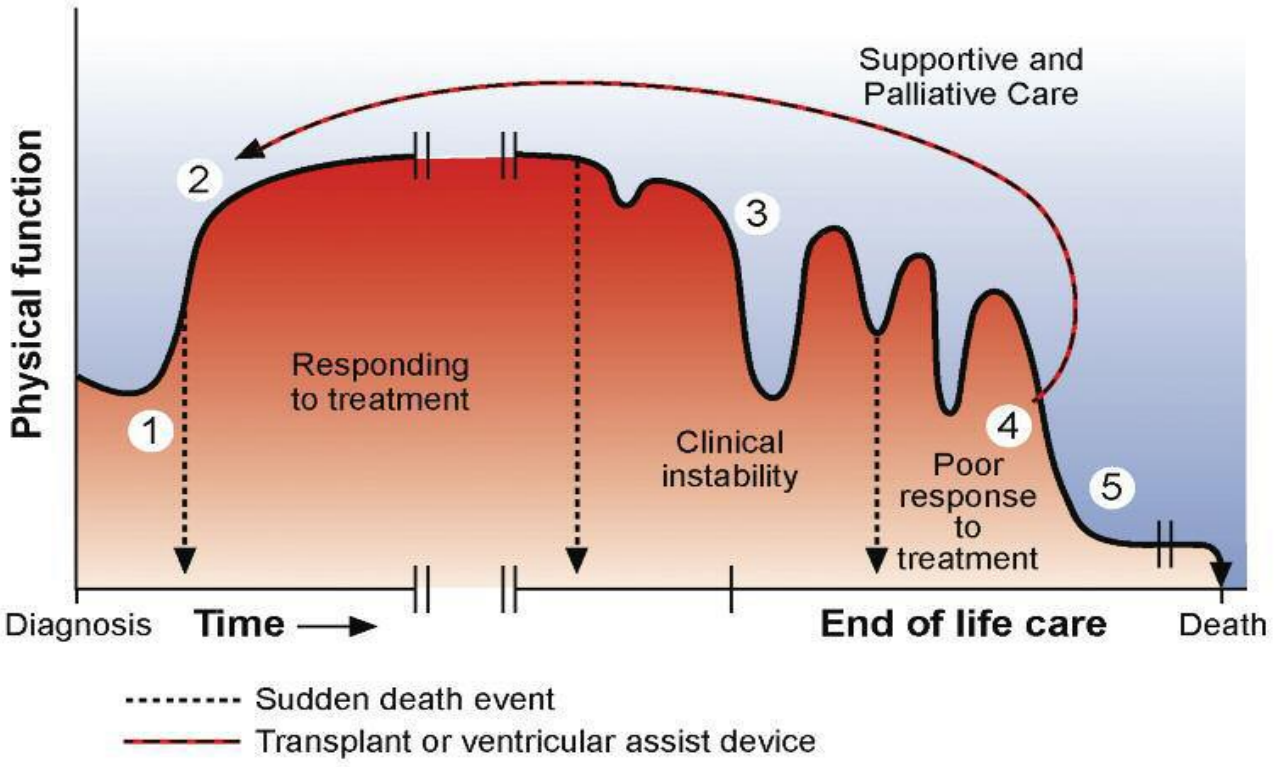
Advancing symptoms- consideration of palliative care….



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Advancing symptoms despite optimal treatment- Importance of team work

- Continuing community support and team work
- Involvement of community heart failure nurses and reassessment through the heart failure clinic
- Heart Failure MDT
- Needs consideration and planning for future care and support
- Communication
- Continuing medical management even if a palliative approach is considered

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Any Questions?