Multi-morbidity at the coal face

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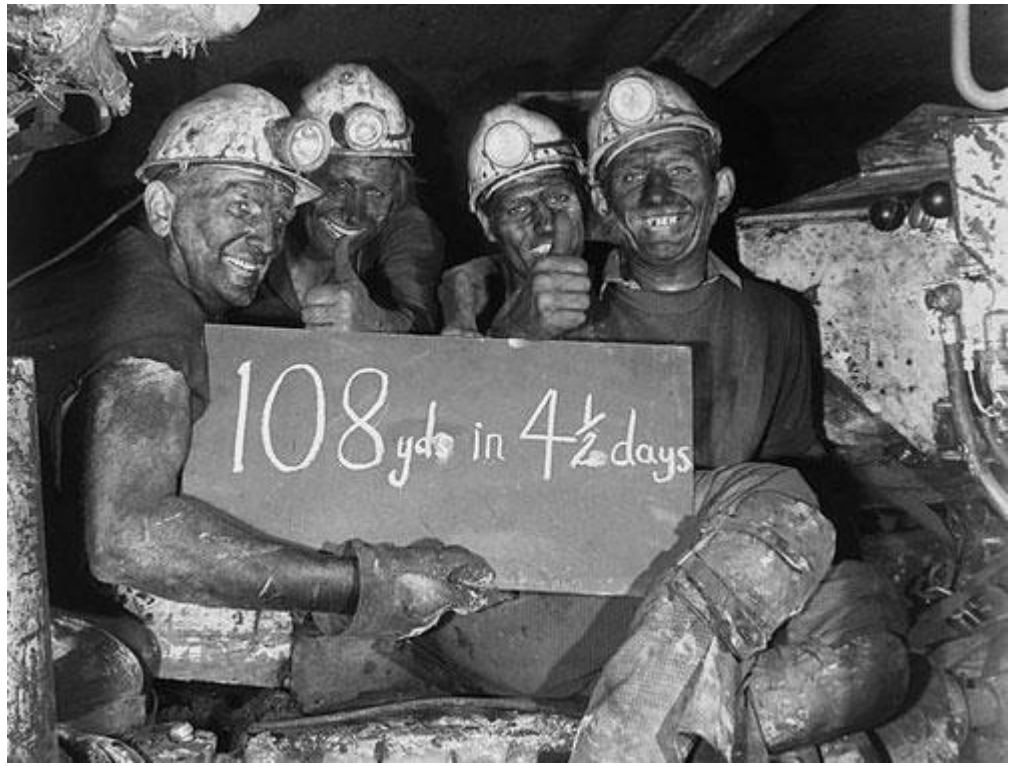
The next 15 minutes……

- What confronts the clinician?
- What are the problems with current systems of care?
- What can we do?



The current environment

- Challenging environment
- Rising demand 3-4%/year
- Demographic shift
- Increasing complexity
- Rising public expectations
- Target driven
- Financial constraints
- Scrutiny/peer review
- Workforce shortages

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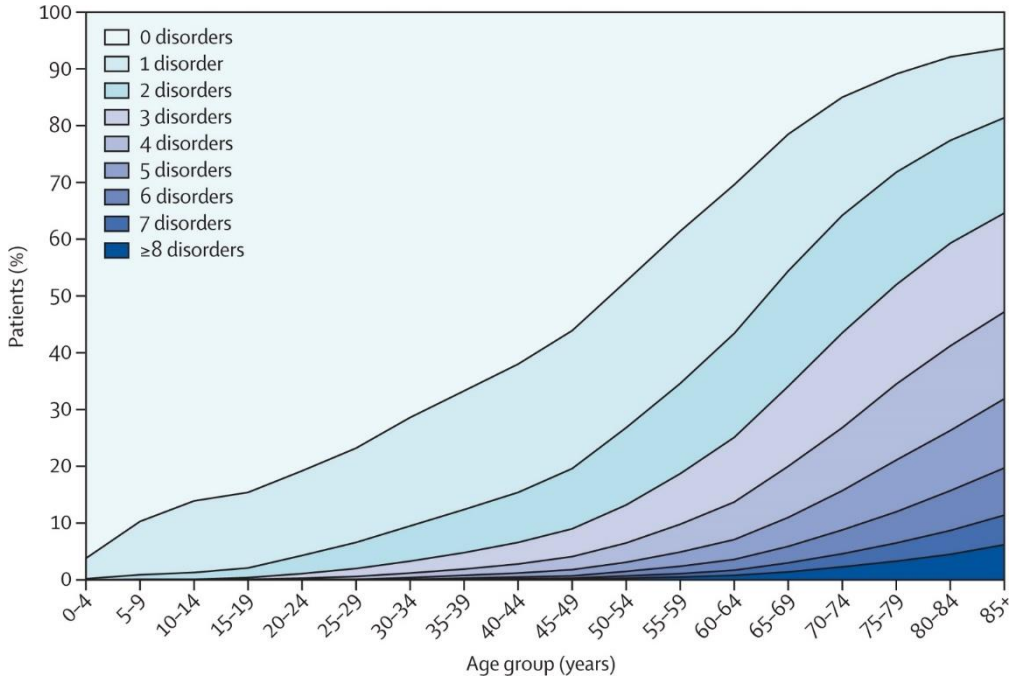
Prevalence of multi-morbidity in UK population



- Most people with a long-term disorder are multimorbid
- Strong association between age and multimorbidity
- **More than half with multimorbidity are<65**
- Mental health disorders more prevalent with increasing numbers of physical disorders

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What confronts the clinician?

- Complexity
  - Physical
  - Psychological
  - Emotional
  - Social
- Frailty
- Polypharmacy
- Uncertainty
- Time pressures

Mary 81yr old lady with fatigue and difficulty mobilising

Moderate/Severe LVSD, previous CABG
Hypertension
CKD
AF
COPD
Osteoarthritis
Osteoporosis-previous # femur
Previous lumpectomy -Breast cancer
CKD
Cataracts
Hypothyroidism

This is a summary of the recommendations on non-pharmacological management of chronic obstructive pulmonary disease and use of inhaled therapies in people over 16. The guideline also covers diagnosis and other areas of management (see www.nice.org.uk/guidance/NG115)

Confirmed diagnosis of COPD

Fundamentals of COPD care
- Offer treatment and support to stop smoking
- Offer pneumococcal and influenza vaccinations
- Offer pulmonary rehabilitation if indicated
- Co-develop a personalised self-management plan
- Optimise treatment for comorbidities

These treatments and plans should be revisited at every review

- Start **inhaled therapies** only if:
  - all the above interventions have been offered (if appropriate), and
  - inhaled therapies are needed to relieve breathlessness or exercise limitation

Inhaled therapies

Offer SABA or SAMA to use if needed

Person still breathless or has exacerbations despite treatment?

No asthmatic features/features suggesting steroid responsiveness*	Asthmatic features/features suggesting steroid responsiveness*
Offer LABA + LAMA	Consider LABA + ICS
	Person still breathless or has exacerbations despite further treatment?
	Offer LAMA + LABA + ICS

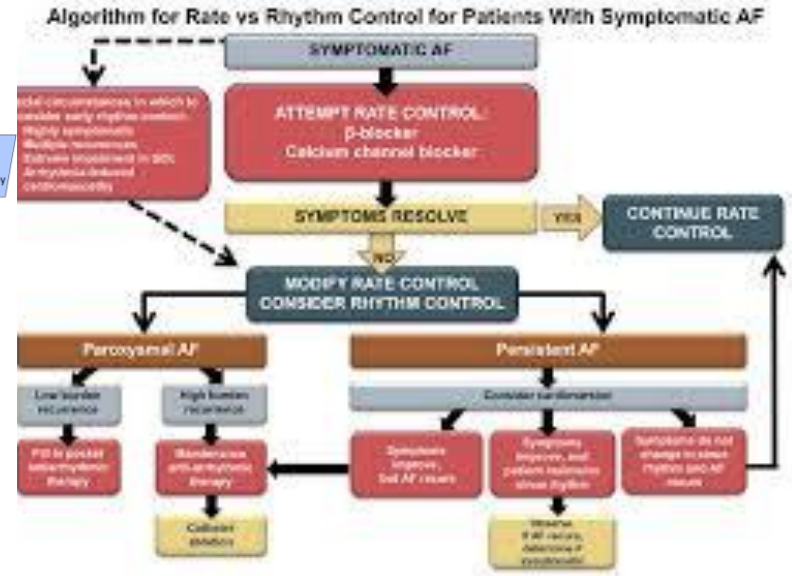
For ALL inhaled therapies:
Train people in correct inhaler technique, and review medication and assess inhaler technique and adherence regularly

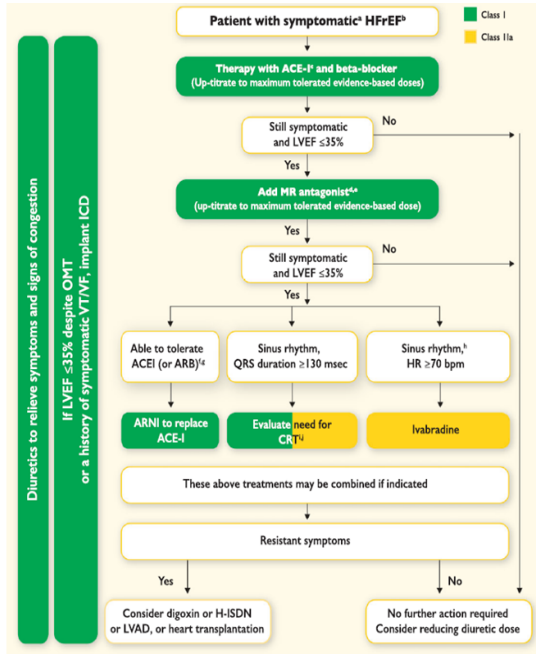
Explore further treatment options if needed (see full guideline at: **www.nice.org.uk/guidance/NG115**)

COPD=chronic obstructive pulmonary disease; SABA=short-acting $beta_2$ agonists; SAMA=short-acting muscarinic antagonists, LABA=long-acting $beta_2$ agonists, LAMA= long-acting muscarinic antagonists, ICS= inhaled corticosteroids; FEV_1=forced expiratory volume in the first second.
*Asthmatic features/features suggesting steroid responsiveness in this context include any previous secure diagnosis of asthma or atopy, a higher blood eosinophil count, substantial variation in FEV_1 over time (at least 400 ml) or substantial diurnal variation in peak expiratory flow (at least 20%).

All Postmenopausal Women
1) Lifestyle and Nutritional Optimization for Bone Health Especially Calcium and Vitamin D
2) Determine the 10-year Fracture Risk According to Country-Specific Guidelines

- **Low-Moderate Risk**
  - **Low Risk**
    - Reassess fracture risk in 2-4yrs
  - **Moderate Risk** (OR)
    - (2.1) **Bisphosphonates**
      (2.2) Reassess fracture risk in 3-5 yrs
      (2.2) (5 yrs for oral, 3 yrs for IV)
    - (4.2)
    - (3.1) **Denosumab**
      (3.2) Reassess fracture risk in 5-10 yrs
    - (4.1) **Teriparatide or Abaloparatide**
      For 2 yrs
  - (8.1) **Calcium + Vitamin D** as adjunct therapy
- **High-Very High Risk**
  - **Low-Moderate Risk**
    (2.2) Consider a drug holiday
    (11.1) Reassess fracture risk every 2-4 yrs
    (2.2) If bone loss or patient becomes high risk, consider restarting therapy
  - **High Risk**
    (2.2) Continue therapy or switch to another therapy
  - Intolerant to or inappropriate for above therapies
    - **Age <60 or <10 yrs past menopause Low VTE risk**
      - No Vasomotor Symptoms High Breast Cancer Risk
        (5.1) **SERM (raloxifene, bazedoxifene)**
      - With Vasomotor Symptoms
        (6.1 + 6.2) **HT (no uterus, Estrogen; with uterus, Estrogen + Progestin) or Tibolone**
    - **Age >60**
      Consider (in order):
      1) SERM (5.1)
      2) HT/Tibolone (6.1+6.2)
      3) Calcitonin (7.1)
      4) Calcium + Vitamin D (8.2)
  - **Low-Moderate Risk**
    Consider giving bisphosphonates and then stopping for a drug holiday
    (11.1) Reassess fracture risk every 1-3 yrs
    If bone loss, fracture occurs, or patient becomes high risk, consider restarting therapy
  - **High Risk**
    (3.2) Continue therapy or switch to another therapy





STAGE	1	2	3	4	5
eGFR mls/min	≥ 90 + albuminuria or haematuria	60 - 89 + albuminuria or haematuria	30 - 59	15 – 29	<15
Tests	Annual U+E (including eGFR) Annual urine ACR			As before but now 6 monthly.	Check U&E 3 monthly
Treatment	• Treat BP to a target of < 130/80 (threshold to treat is 140/90) • ACEi or ARB if urine ACR ≥ 30 in non-diabetic or ACR >3 in diabetes • Statin if CVD risk ≥20% over 10 years • Aspirin 75mg (if no contraindication) • Advise lifestyle changes as appropriate				
Referral	Fall in eGFR by >15% per year Rise in serum creatinine >20% per year ± Urine ACR ≥ 100 ± Systolic BP ≥ 160 (despite treatment with multiple agents)			Discussion with or referral to renal unit is usual.	Usually automatic (Unless not for active treatment based co-morbidity)

Multi-morbidity and disease specific guidelines

- Guidelines developed from evidence
- Typically multi-morbidity and advanced frailty are exclusion criteria for trials
- Patients with multi-morbidity have multiple single disease guidelines applied
- Targets become drivers to comply
- HCP wish to “do the right thing”
- Defensive practice

“Evidence-based guidelines developed for people with single diseases should not necessarily be extrapolated to the management of patients with multiple conditions, given the possibility that this may result in over-treatment and over-complex medication regimes”.

CMO Scotland 2015

Mary-on excellent evidence based therapy

Drug history:

- Enalapril 10mg bd
- Bisoprolol 5mg bd
- Spironolactone 25mg
- Frusemide 40mg bd
- Isosorbide mononitrate 20 mg bd
- Aspirin 75mg
- Clopidogrel 75mg
- Simvastatin 40mg
- Ca Vit D 2 tablets
- Alendronic acid 70mg/week
- Thyroxine 50mcg
- Letrozole 2.5 mg

So what's the problem ?

Heart failure is no longer the main problem

- Frailty
- Postural hypotension
- Deteriorating renal function
- Under-replaced with Thyroxine
- Polypharmacy
- Muscle wasting and deconditioning
- Poor function
- Low mood
- Hearing impairment
- Socially isolated

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Frailty

- 10% of people >65yrs
- 25-50% of people>85yrs

A distinctive health state related to the ageing process in which multiple body systems gradually lose their built in reserves

Patients at risk of adverse outcomes such as dramatic changes in physical and mental well-being after an apparently minor event such as an infection or new medication

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Frailty associated with adverse outcomes

- Prolonged hospital stays
- Hospital associated harms
  - Delirium
  - Equipment related
  - Reduce mobility
  - Falls
  - Pressure ulcers
  - Poor advanced care planning
  - Medication related
  - Death
- Discharge to care home

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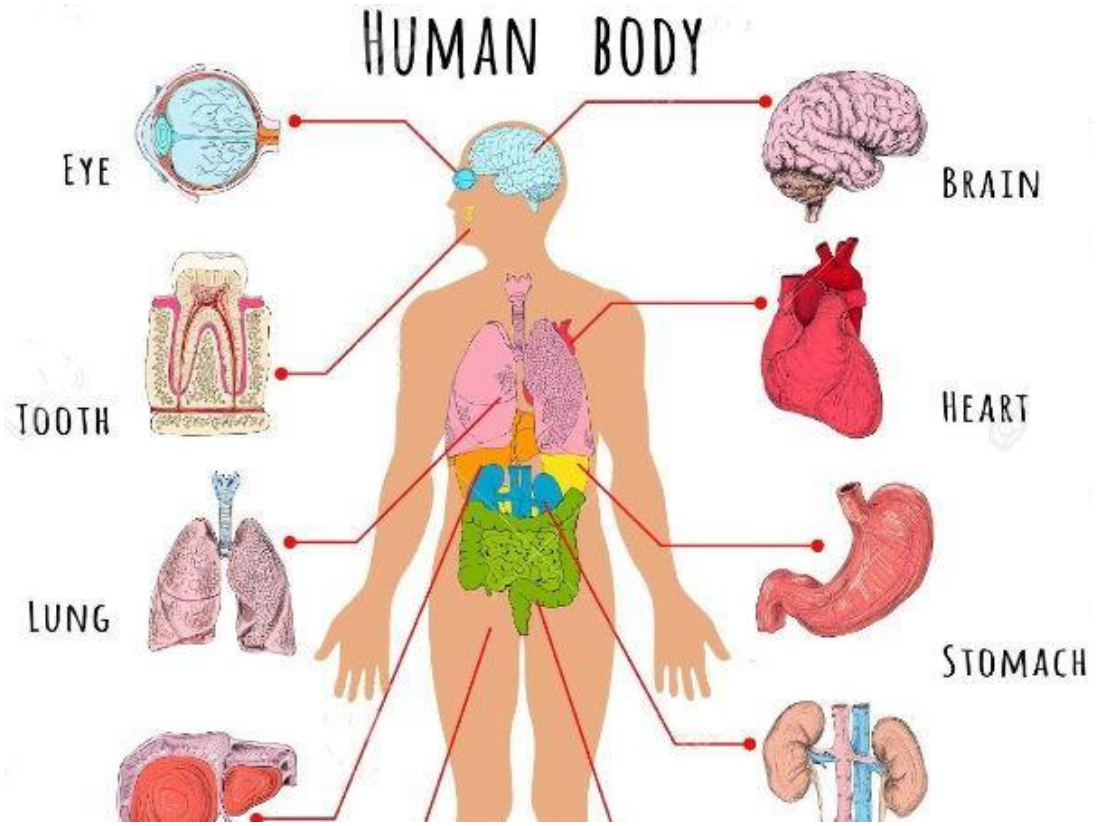
Polypharmacy

- ?An inevitability of multi morbidity management?
- Mean number of drugs of heart failure patient on discharge is 9
- Changes in pharmacokinetics and pharmacodynamics
- High risk of adverse drug interactions and drug to drug interactions/hospitalisations
- Burden for patient
- Economic impact

What are the problems with the current system of care?

- Single organ/disease services
- Multiple clinics and appointments
- Duration of appointments
- Competing priorities



Competing priorities?

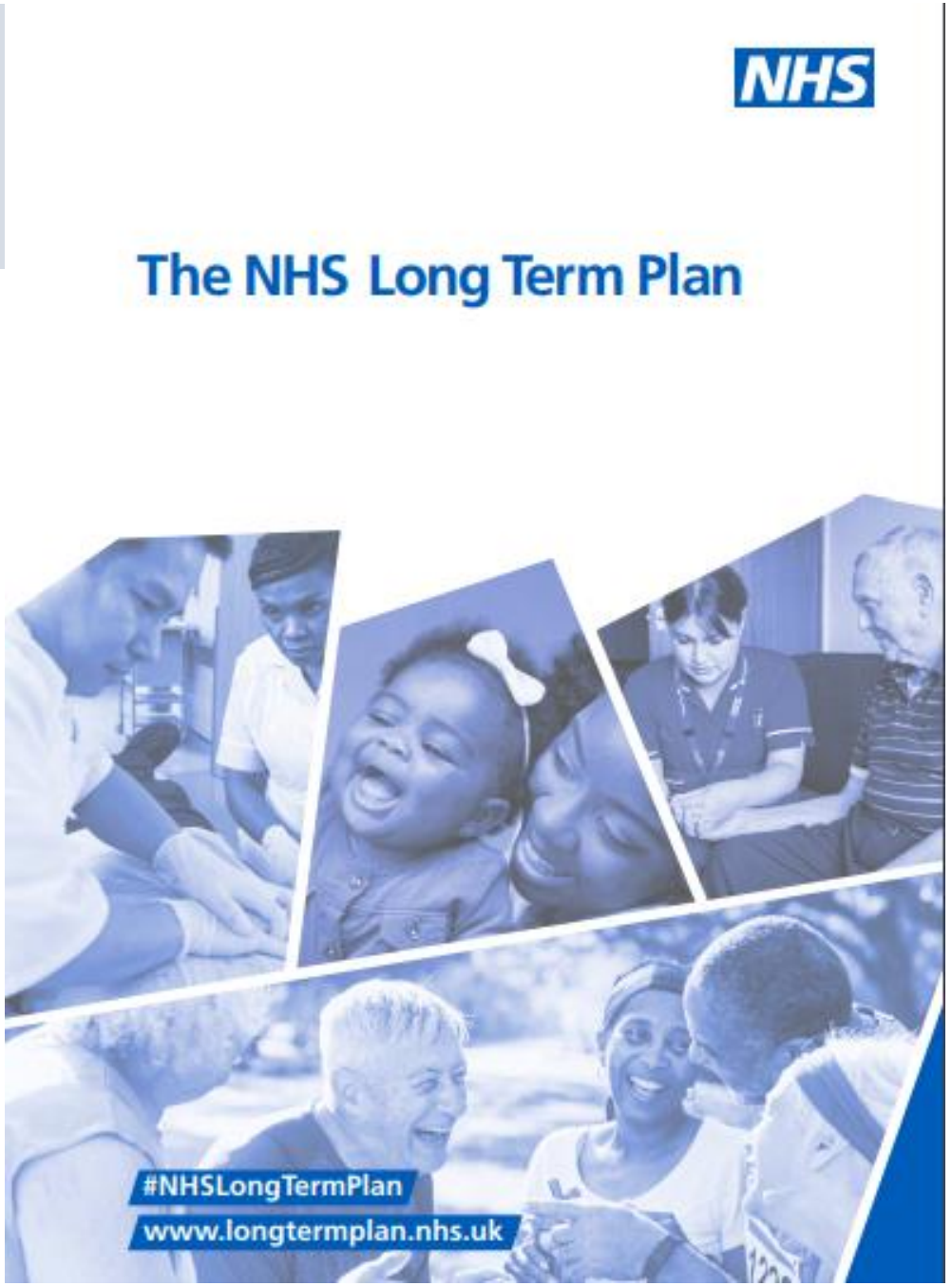
- Achieving a balance
- The opportunities for discussion
- The need to compromise
- The correct care setting/ownership
  - Community
  - Outpatient clinic
  - In patient care

What are the problems with the current system of care

- Training
- Interface between primary and secondary care
- Interface with social care
- What matters to me?

What can we do?

- Healthcare strategy and policy must incorporate multi morbidity
- Education and training of HCP
  - Shape of Training
- Generalist v specialist
- Healthcare teams
- Design/configuration of services
- Integration of services with supporting digital strategy



What else?

Better evidence needed across a broad range of areas

- "Real world" patients
- Epidemiology
- Trends and patterns
- Burden: health, social, economic
- Mechanisms of disease clustering
- Patient preferences and priorities
- Prevention
- Current patterns of care
- New approaches to management

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What else?

- Priorities for the individual
- Shared decision making

Summary

- Multi morbidity is becoming the norm
- Everything we do must reflect that
  - Research
  - Education
  - Policy
  - Service design

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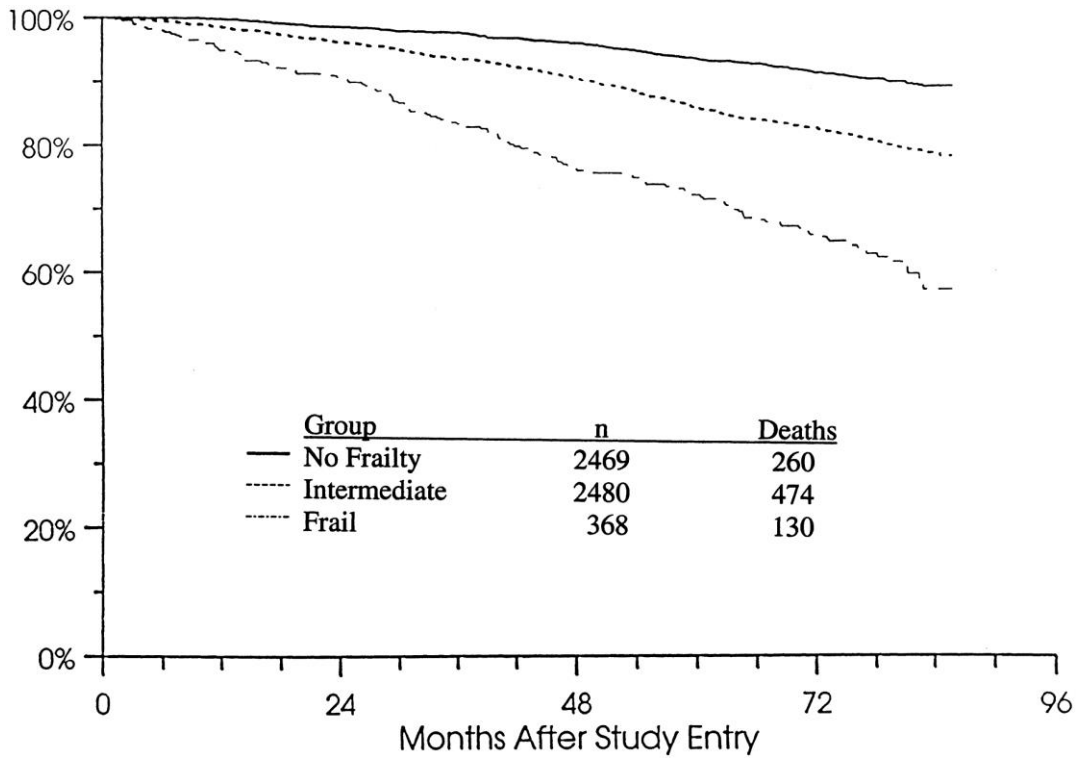
Survival curve estimates (unadjusted) over 72 months of follow-up by frailty status at baseline: Frail (3 or more criteria present); Intermediate (1 or 2 criteria present); Not frail (0 criteria present).



Linda P. Fried et al. J Gerontol A Biol Sci Med Sci 2001;56:M146-M157

The Gerontological Society of America

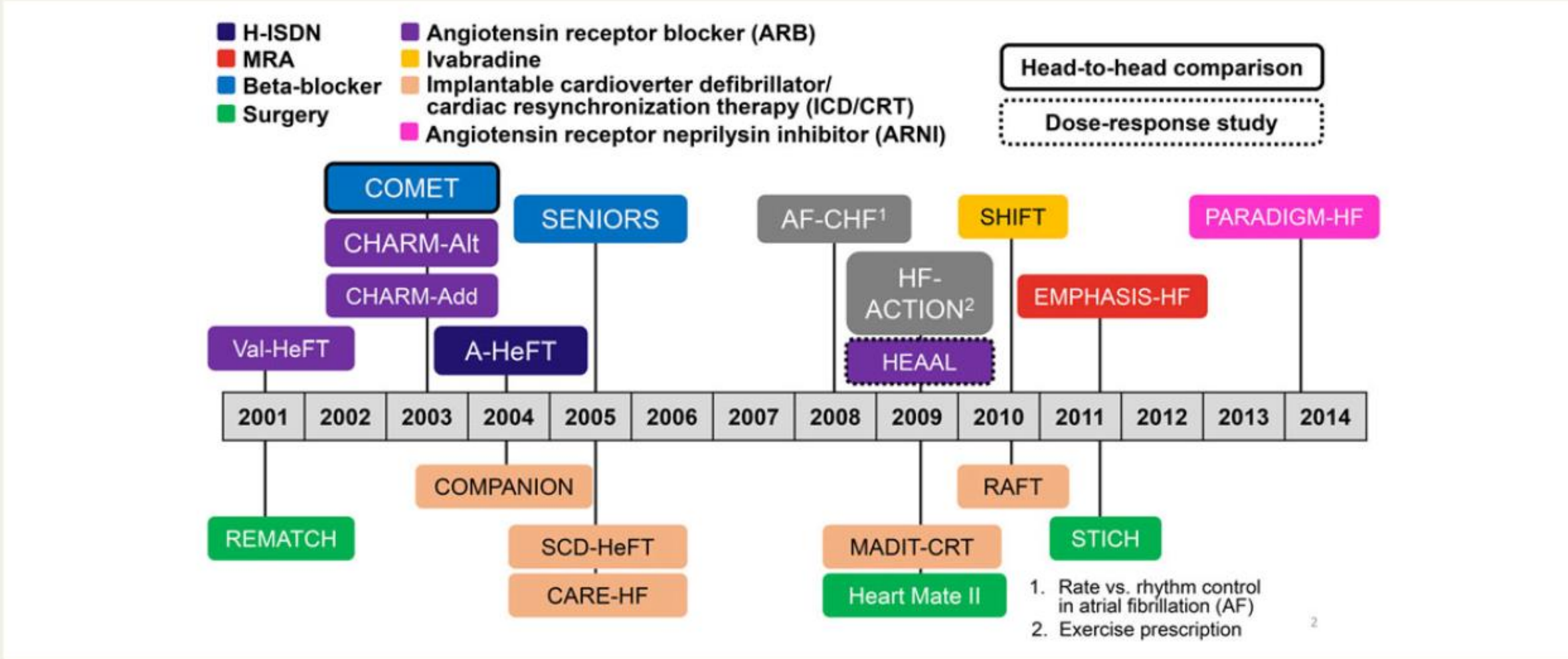
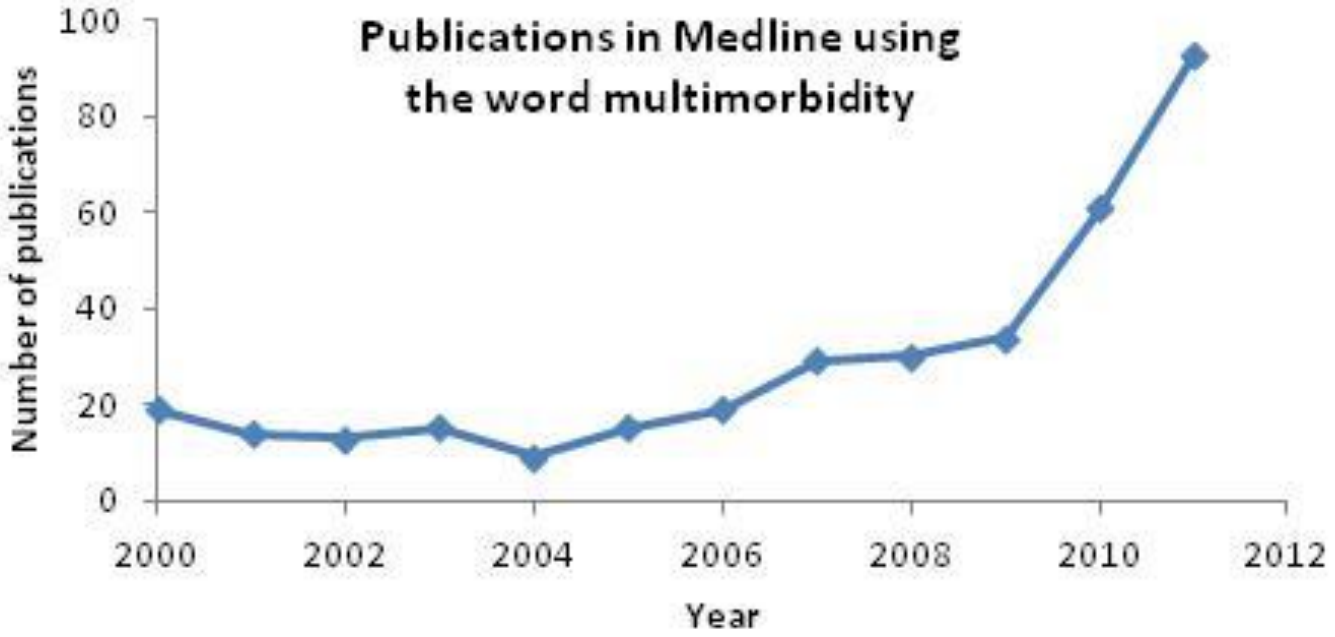


Figure 2 Heart failure-reduced ejection fraction: thirty years of progress - positive drug, device and other trials 2001–2014.



Definition: Multimorbidity is the presence of 2 or more long term health conditions