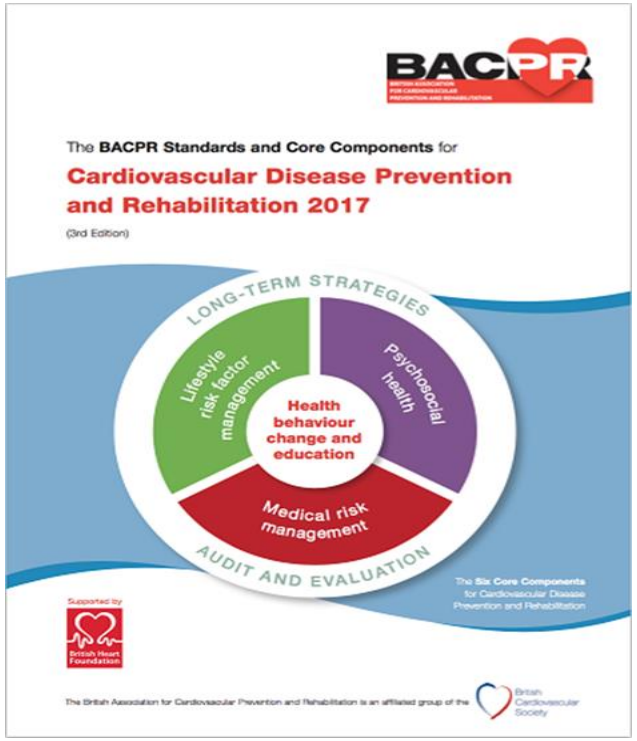
The Future of “Cardiac Rehabilitation?”



Edinburgh Napier University
1st Cardiovascular Health Conference
Physical Activity Interventions

Dr Scott W Murray
MBChB, BSc, MRCP, MD
BACPR Past-President
Consultant Preventive Cardiologist
Royal Liverpool University Hospital

Image Problem and Desire

“Sexy” Cardiology

Prevention + Rehabilitation

Q1: WHY?? – How do we improve the image of rehabilitation??

Should We Rebrand/Re-invent?

- Is Rehabilitation a word which invokes negativity?
- BA**CPR** – ?Cardiopulmonary Resuscitation

- British Association for Cardiovascular Health (BACH)
- Cardiovascular Health Improvement (CHI)
- Preventive Cardiology
- Heart Enhancement Programs
- Cardiac Recovery and Prevention (CRAP) ☹


CARDIAC CENTRE

The NSF goal

Every hospital should:

ensure: a) that all people discharged fro
after coronary revascularisation are offer
that one year after discharge at least 50
regularly and have a BMI < 30 kg/m²; the
data no more than 12 months old.

Holding the NHS to account: the NHS

The CHD performance indicators, relevan
Performance Assessment Framework as fo
derived from routinely available data):

Health improvement

- age standardised or age and sex standar
  by socio-economic class)

Fair access and effective delivery of appropria

- *number and % of patients years discharg*
  OR with a primary diagnosis of AMI with
  rehabilitation in discharge communicatio

3.88. **Enabling more people with heart and lung disease to complete a programme of education and exercise based rehabilitation will result in improved exercise capacity**

s. Breathlessness is a very common symptom
) conditions as well as psychological and mental
ical de-conditioning. Generic pulmonary and
shown to be effective for both conditions,
onary rehabilitation groups to join forces and
learn demonstrators will be used to establish
ary rehabilitation models, which will then be

tion recommended by NICE which can save
spital readmissions[121]. Access to and uptake
ngland, and only 62,822 patients (52%) of the
s of cardiac rehabilitation[122]. Scaling up and
be amongst the best in Europe will prevent up
admissions over 10 years.

se
00 heart attacks, strokes and dementia

rove community first response and
e survival from out of hospital cardiac
arrest.

- **By 2028 the proportion of patients accessing cardiac rehabilitation will be amongst the best in Europe, with up to 85% of those eligible accessing care.**

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Latest Headlines | *Health*

Hospital admissions for heart failure soar to record levels as new figures more than 86,000 patients suffered from the condition last year

- Admissions rose 33 per cent from 65,000 in 2013/14 to 86,500 in 2018/19
- Experts believe UK's ageing and growing population is key reason for increase
- Lifestyle factors such as obesity and poor diet also increase patients' risk

NHS treating 5,000 diabetics a day as one in 10 patients now suffer with illness, figures reveal

Mason Boycott-Owen

The Telegraph 4 November 2019

Trending #CVD

Time Period	Atrial Fibrillation		CHD		Heart Failure		Hypertension		Stroke/TIA	
	Count	%	Count	%	Count	%	Count	%	Count	%
2008/09	6,409	1.33	19,821	4.12	3,699	0.77	62,007	12.89	8,317	1.73
2009/10	6,551	1.35	19,620	4.03	3,657	0.75	63,515	13.04	8,483	1.74
2010/11	6,776	1.38	19,252	3.93	3,625	0.74	65,064	13.27	8,609	1.76
2011/12	7,118	1.44	19,076	3.87	3,805	0.77	66,020	13.40	8,776	1.78
2012/13	7,411	1.49	18,775	3.78	3,863	0.78	66,803	13.46	8,615	1.74
2013/14	7,676	1.53	18,447	3.69	3,953	0.79	67,396	13.48	8,666	1.73
2014/15	8,027	1.59	18,185	3.61	3,974	0.79	68,214	13.52	8,715	1.73
2015/16	8,604	1.68	17,931	3.50	4,300	0.84	68,990	13.46	8,921	1.74
Variance 08/09 - 15/16	**34%**	**26%**	**-10%**	**-15%**	**16%**	**9%**	**11%**	**4%**	**7%**	**1%**

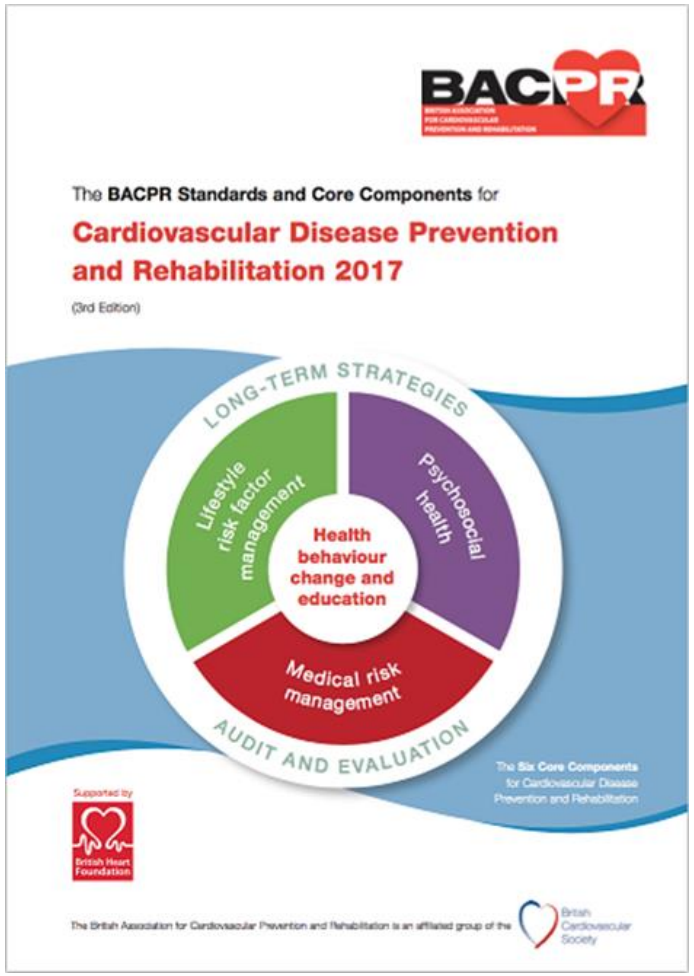
Table 1: Trends in Disease Prevalence, 2008/09 – 2015-16

Source: Quality and Outcomes Framework, Health and Social Care Information Centre

Strong Evidence for Cardiac Rehabilitation

- **Taylor, R.S. et.al. 2014**
  - 48 RCTs, n= 8940
  - **20% reduction in all cause mortality (?2015/2016)**
  - **24% reduction in cardiovascular mortality**
  - No other procedure/intervention can match this.
  - ARR in CV Mortality = 10.4-7.6% - **NNT 37**
  - Hospital Admissions 30.7%-26.1% - **NNT 22**
  - HF Hospital Admissions reduced 39% - **NNT 18**
  - £7K cost per QUALY
  - **NICE STILL APPROVE DRUGS AT £29K PER QUALY!**
  - **C/W AF ABLATION £7K per procedure with <50% success rate in PAF and 75% failure in Persistent AF!**
  - **PLEASE PUT THE MONEY WHERE THE MAXIMUM BENEFIT IS!**

Cardiac Rehabilitation – Unbeatable?
If this was a Pill it would be a "Blockbuster"



Reduces:

- All cause mortality by 11- 26% [1,2,3,4]
- Cardiac mortality by 26 – 36% [1,2,3,4]
- Morbidity [4,5]
- Unplanned admissions by 28 -56% [6,7]

Improves:

- Quality of life [8]
- Functional capacity [8]

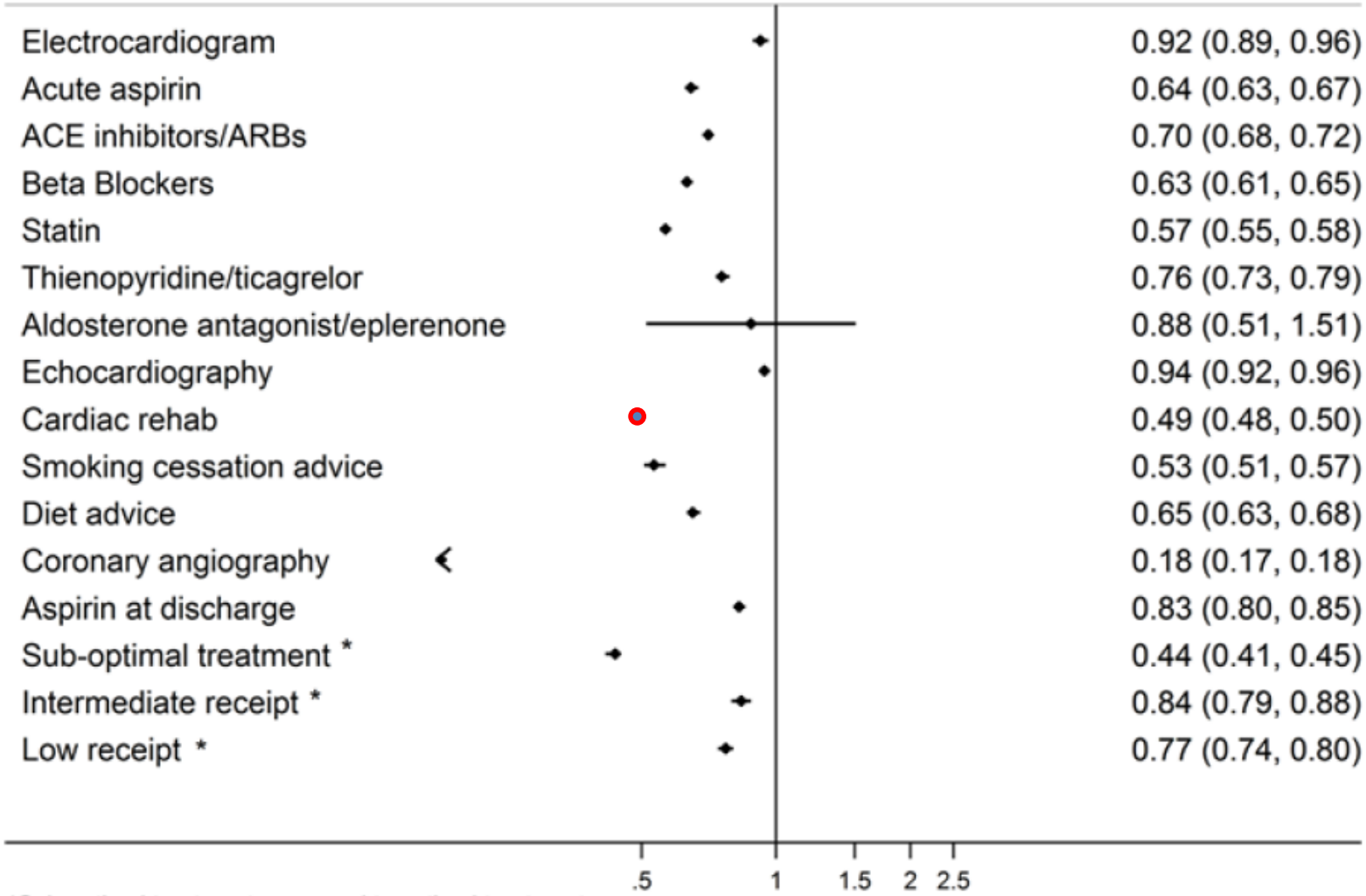
Supports:

- Early return to work [8]
- The development of self-management skills [8]

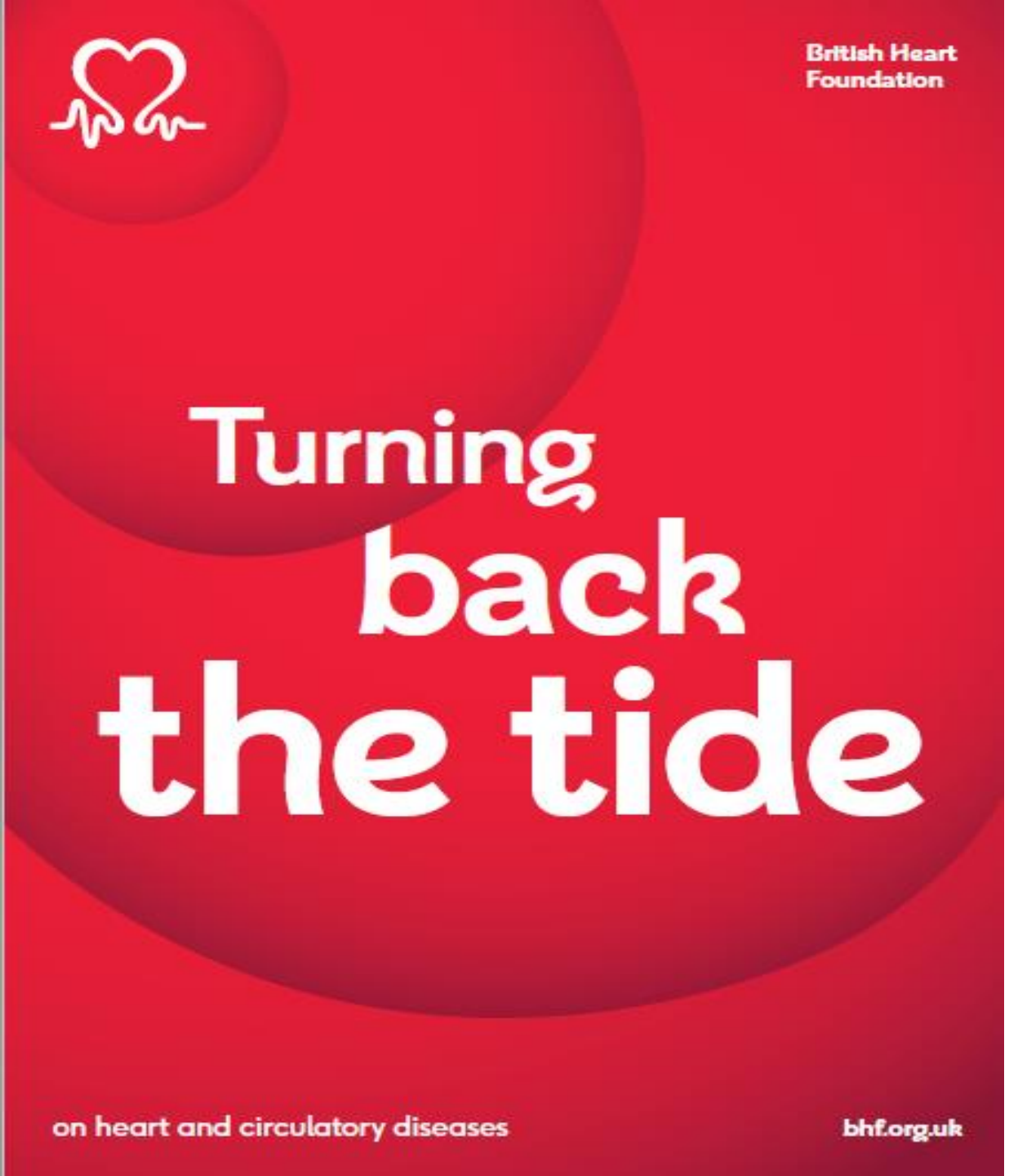
www.bacpr.com

BMJ Clinical Review on CR Oct 2015
http://www.bmj.com/content/351/bmj.h5000

Impact of care opportunities



Dondo T, EHJ Acute Cardiovasc Care in press, 2016



4. Reimagine rehabilitation services

Personalised recovery services

Most cardiac rehabilitation is group-based and undertaken in a hospital setting. We know that certain groups (women, socially deprived communities, people from black and minority ethnic (BAME) communities, and people with heart failure) are less likely to take up services of this kind. An expansion of new models of delivery including digitally supported, home-based and more personalised 'menu-based' approaches could help tackle this problem.

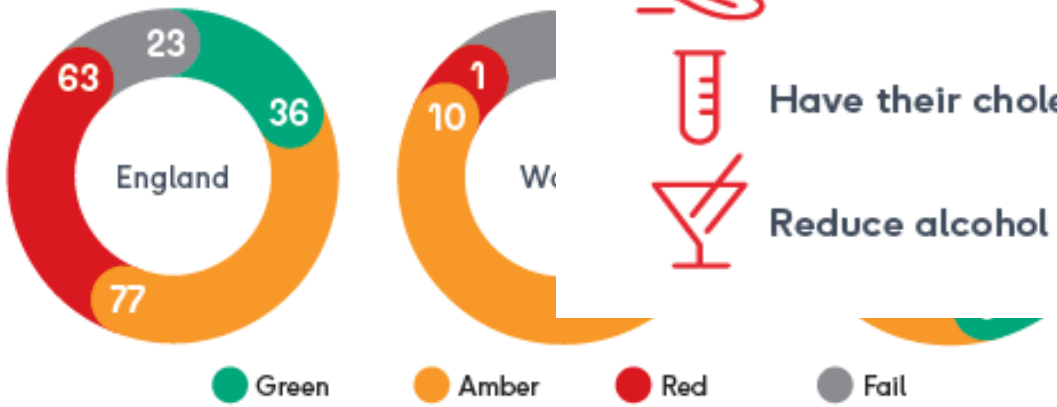
British Heart Foundation

Cardiac rehab
the bi

Of the 229 CR programmes that c
46 meet the seven key performanc
Certification Programme for CR a
certified.

Programmes that meet 4-6 of thes
as 'amber'. Programmes meeting
Programmes meeting no standard

We want to see more programmes



Women and CR

Fewer women start CR than men.

Uptake rate

♀ 29% ♂ 71%

After CR, women are less likely to:

- See an improvement in their physical fitness
- Have their cholesterol levels treated appropriately
- Reduce alcohol consumption to government guidelines

Encouraging higher uptake

ade progress in getting
aching a plateau.

years

4/15 2015/16 2016/17

nsure as many eligible

esult in 8,500 fewer deaths
ver 10 years.

emarkable 20,000 lives
the next decade, as well
nds.

Source:

Hinde S, Bojke L, Harrison A, Doherty P. (2018) Modelling of potential CR uptake scenarios for the BHF vs 2015/16 NACR data

HOT OFF THE PRESS Oct 24th 2019!!
Major Benefits Post Valve Surgery

News > Medscape Medical News

Cardiac Rehab Linked to Survival Benefit After Valve Surgery

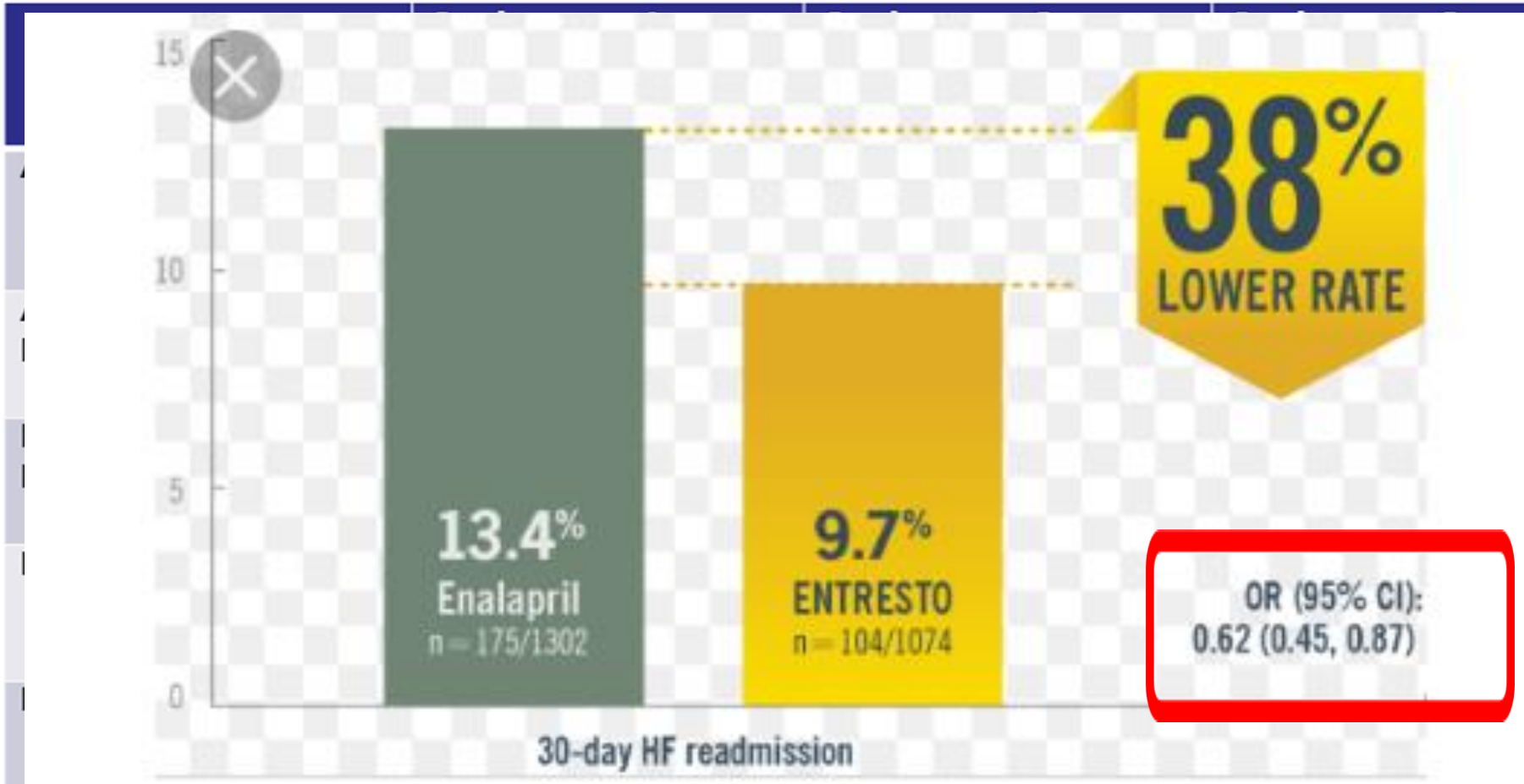
Patrice Wendling
October 24, 2019

Cardiac rehabilitation is associated with fewer deaths and hospital readmissions in the year after open heart valve surgery, although stark differences in uptake exist along racial and geographic lines, a large Medicare study shows.

Cardiac rehab was associated with a relative 34% lower risk of hospitalization and 61% lower risk of mortality at 1 year. The absolute reduction in mortality was 4.2%.

Results also show that cardiac rehab was associated with improved outcomes for aortic, mitral, and tricuspid valve surgery.

Cochrane Meta-analyses
CR for Heart Failure



	Cochrane v4 Long et al (2019)
7) 2)	RR: 0.89 (0.66 to 1.21) RR: 0.88 (0.75 to 1.02)
0)	RR: 0.70 (0.60 to 0.83)
2)	RR: 0.59 (0.42 to 0.84)
	Not reported
	-7.1 (-10.5 to -3.7) 0.60 (0.39 to 0.82)

The REACH-HF Intervention

Pilot and Feasibility Studies

Open Access

Colin J. Greaves[1*], Jennifer Wingham[1,2], Caroly
Michelle Clark[3], Jackie Austin[6], Charles Abrahar
Sarah Buckingham[2], Russell Davis[10], Hasnain D

Abstract

Background: We aimed to establish the suppo

Key features

- Delivered at the patient's home via a mic of F2F & telephone contacts over 12 weeks (typically 4 to 6 contacts)
- Facilitation: trained health professional - HF-specialist nurse; physio, CR staff
- Optimise self-management: (1) understanding HF, (2) change of lifestyle key self-care targets (physical activity, managing fluids, managing medications and managing stress/anxiety/low mood), and (3) living with the uncertainty of HF
- Structured exercise programme - chair based exercise DVD &/or walking programme

reachHF
Rehabilitation Enablement in Chronic Heart Failure

We know what we should be doing – No Brainer!

Hybrid Heart Recovery - MD Team or ?

Nurse

- Medical History
- Smoking Cessa
- BP
- Cholesterol
- Diabetes remis
- Medications
- Psychosocial H

PAS

- ıitual activity
- terns
- riers to exercise
- ysical limitations
- nctional Capacity
- k stratification

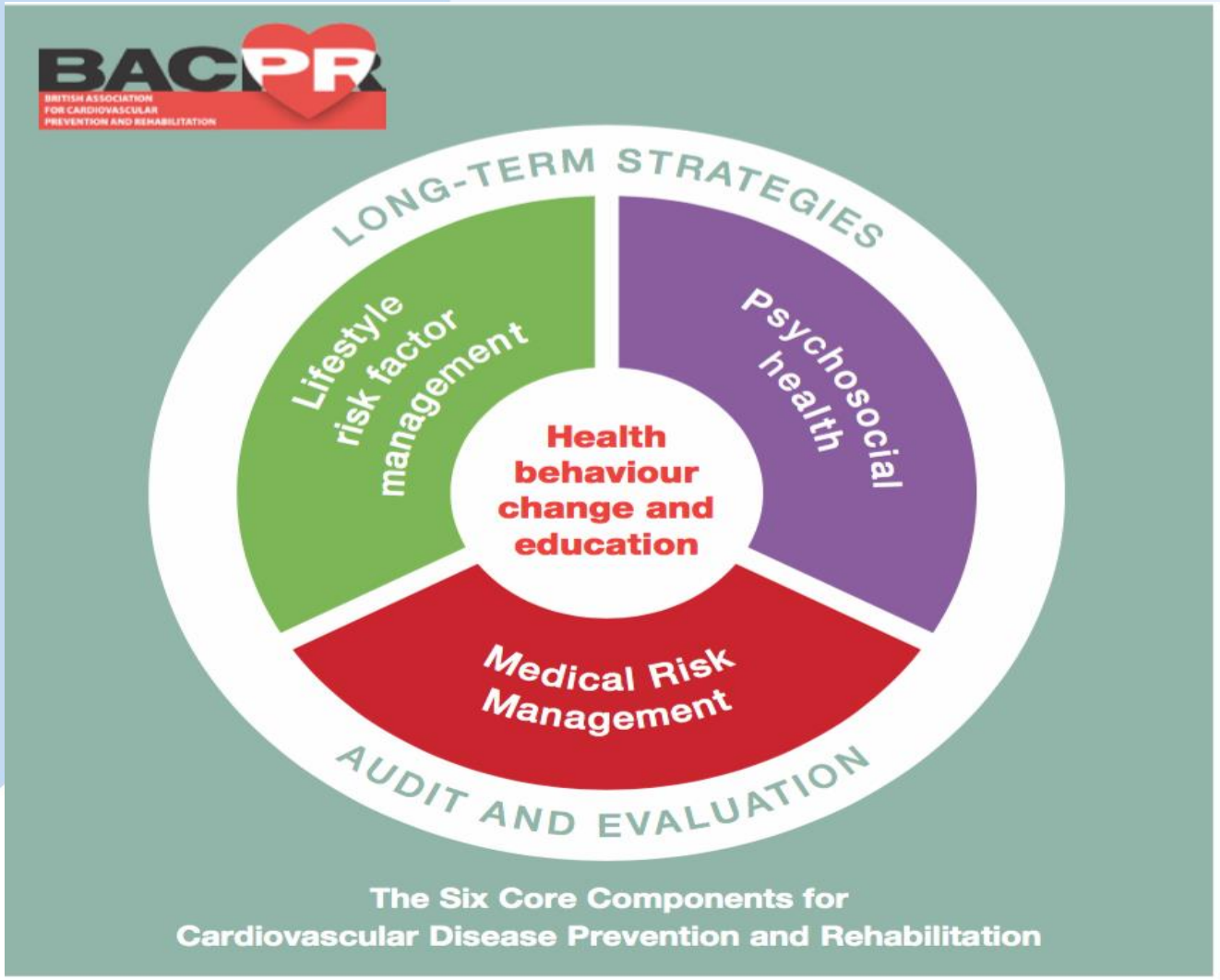
Physician input

- Weekly board round
- Medical oversight

Clinical Psychologist

- Supporting MDT in HBC
- Psychosocial interventions

Simplified Six Core Components

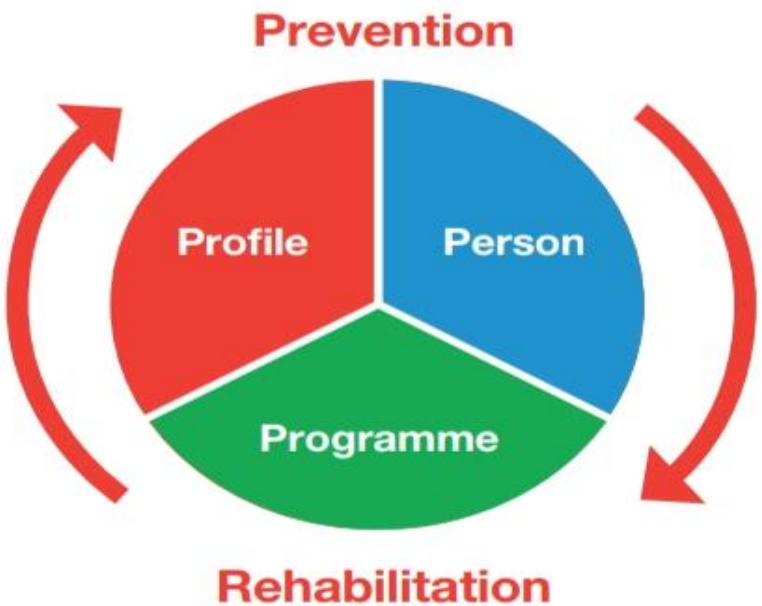


BACPR
Education

The three core work streams for 2019 – 2022 are:

1. Increasing the profile of cardiovascular prevention and rehabilitation
2. Supporting personal and professional development of the individual BACPR member
3. Supporting rehabilitation programmes to enable the delivery of best practice

The foundations of this Strategy are summarised by the model below:



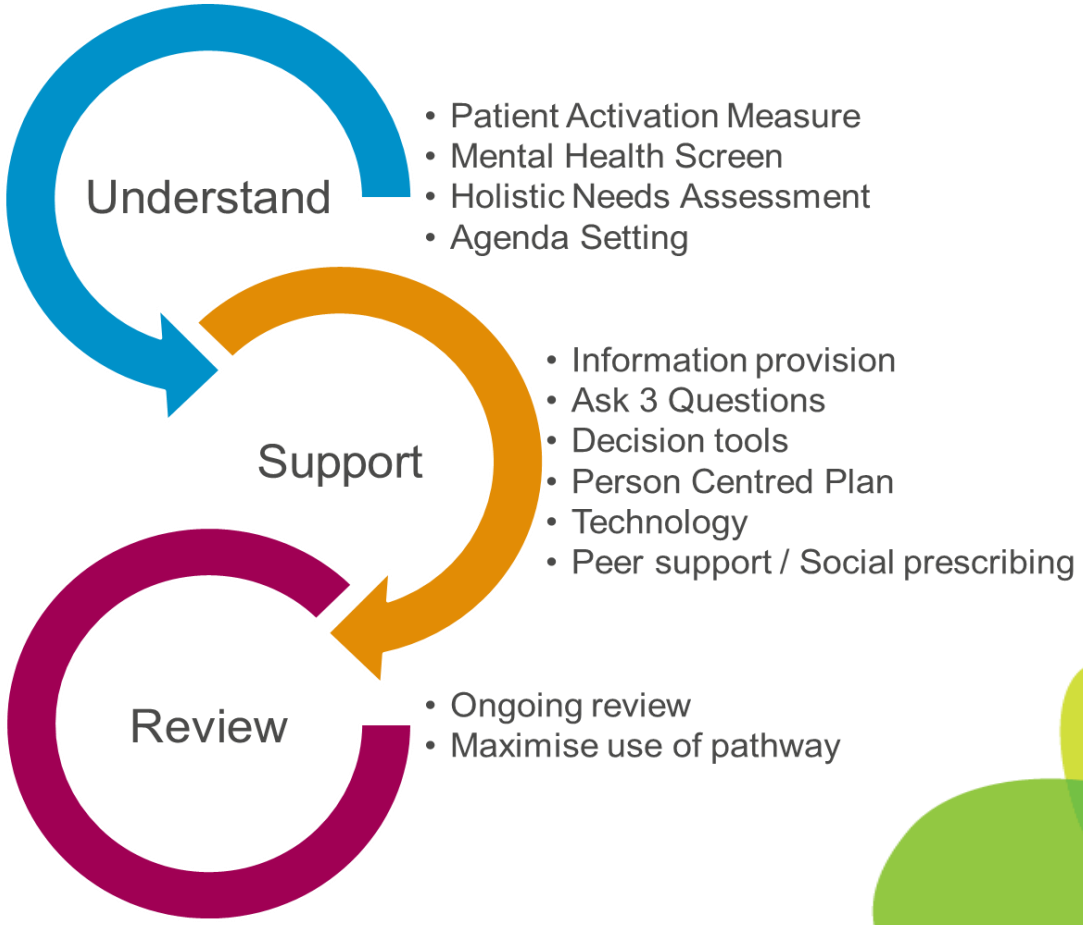
Patient Activation with Support

- The education component of cardiovascular prevention and rehabilitation should empower individuals to better manage their condition. Topics may include:
  - Pathophysiology and symptoms
  - Physical activity, healthy eating and weight management
  - Tobacco cessation and relapse prevention
  - Self-management and behavioural management of other risk factors including blood pressure, lipids and glucose
  - Medical and pharmaceutical management of blood pressure, lipids and glucose
  - Psychological and emotional self-management
  - Social support and other contextual factors
  - Activities of daily living
  - Occupational/vocational factors
  - Resuming and maintaining sexual relations and dealing with sexual dysfunction
  - Surgical interventions and devices
  - Cardiopulmonary resuscitation
  - Additional information, as specified in other components.

NHS Liverpool Clinical Commissioning Group

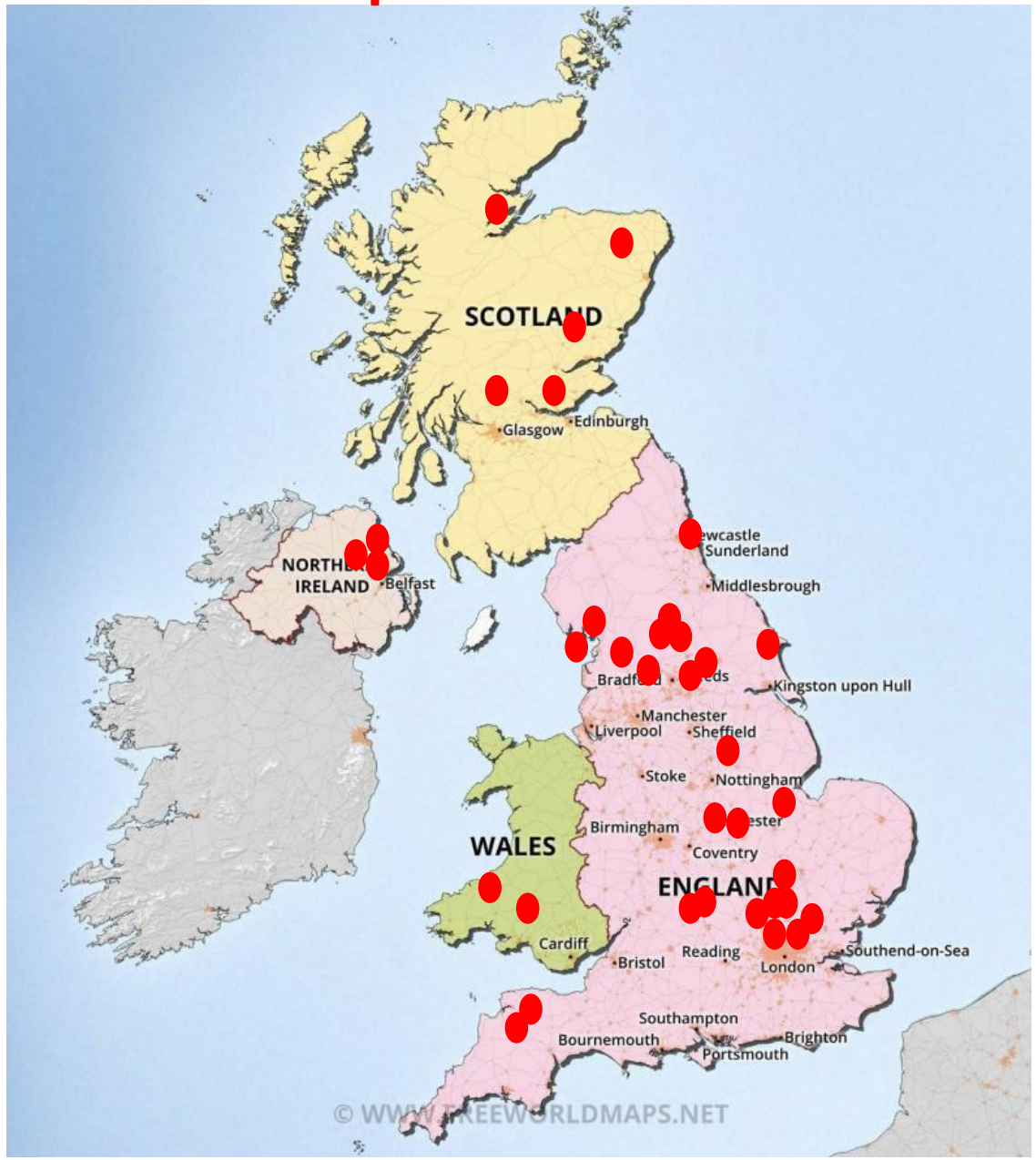
9 Self care approaches

1	Information Provision
2	Self Management Education
3	Holistic Needs Assessment
4	Shared Decision Making
5	Person Centred Planning
6	Making Every Contact Count
7	Technology
8	Peer Support
9	Social Prescribing



ASPIRE-3-PREVENT: spread of centres across the UK

Aberdeen
Barrow-in-Furness
Barnsley
Basildon
Belfast
Blackpool
Bradford
Coventry
Dundee
Edinburgh
Exeter
Glasgow
Harrogate
Hull
Huntingdon
Inverness

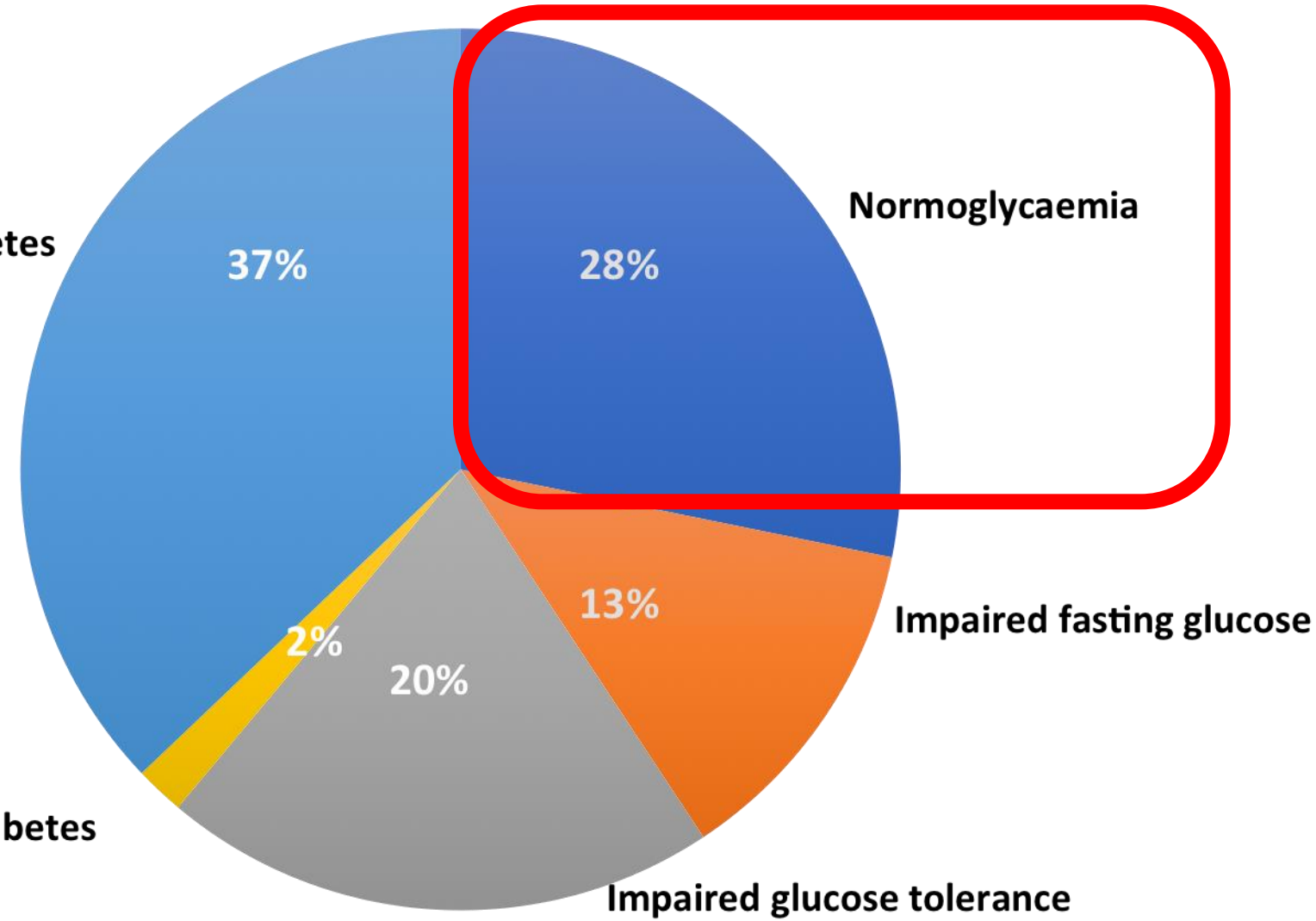


Lancaster
Llanelli
London
Luton
Milton Keynes
Nottingham
North Shields
Oldham
Oxford
Peterborough
Reading
Stevenage
Swansea
Wigan
Yeovil

ASPIRE-3-PREVENT

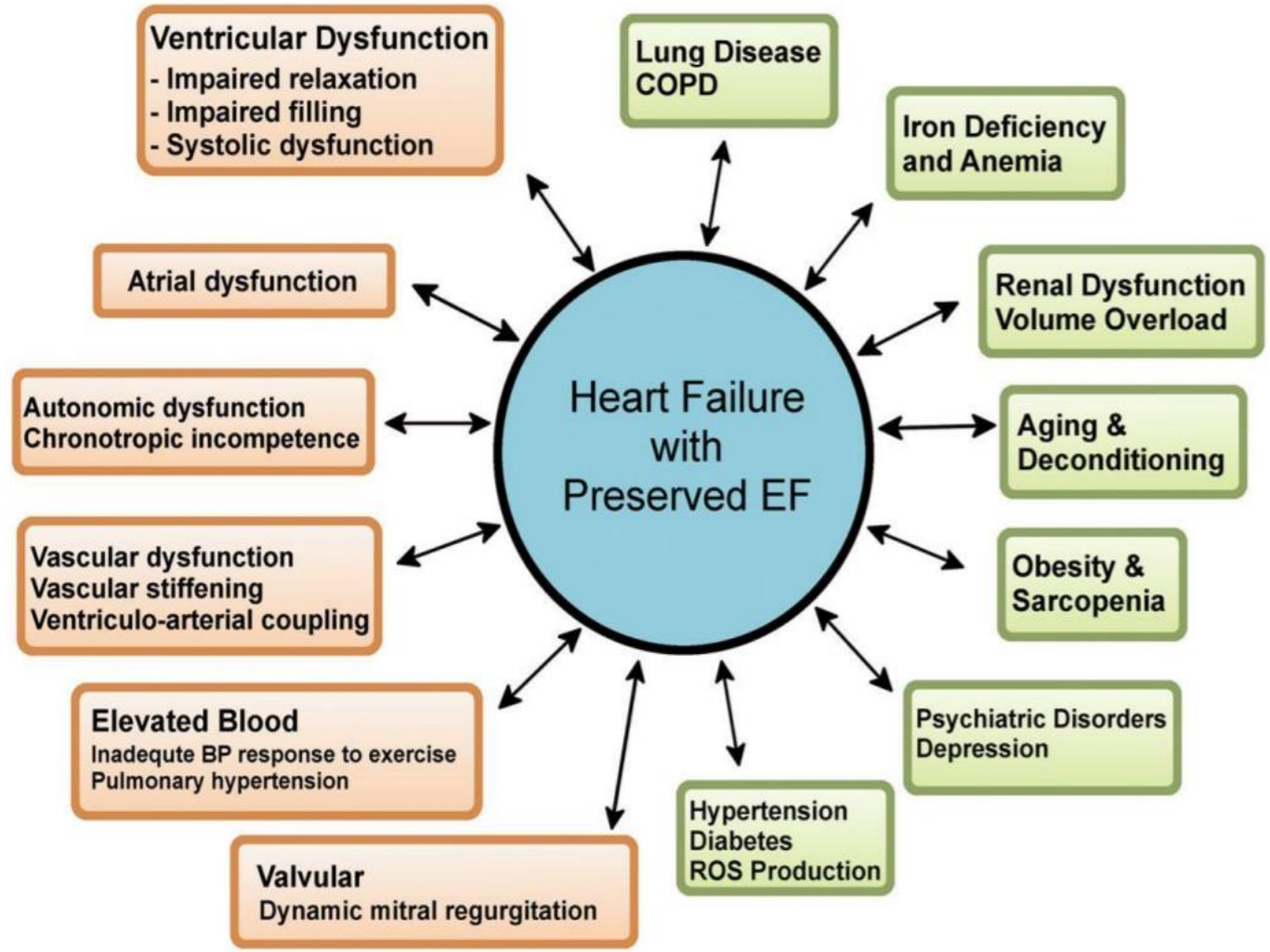
Risk factor management: Blood pressure, lipids, glucose and diabetes and therapeutic control

Glucose metabolism in patients with CAD
The complete picture



72%
DYSGLYCAEMIC

HF-PEF – "Future Heart Syndrome"



Lifestyle Risk Fac

Processed foods, su
refined carbohydra

Physical inactivit

Stress

Inadeq
slee

Genetic Risk Fact

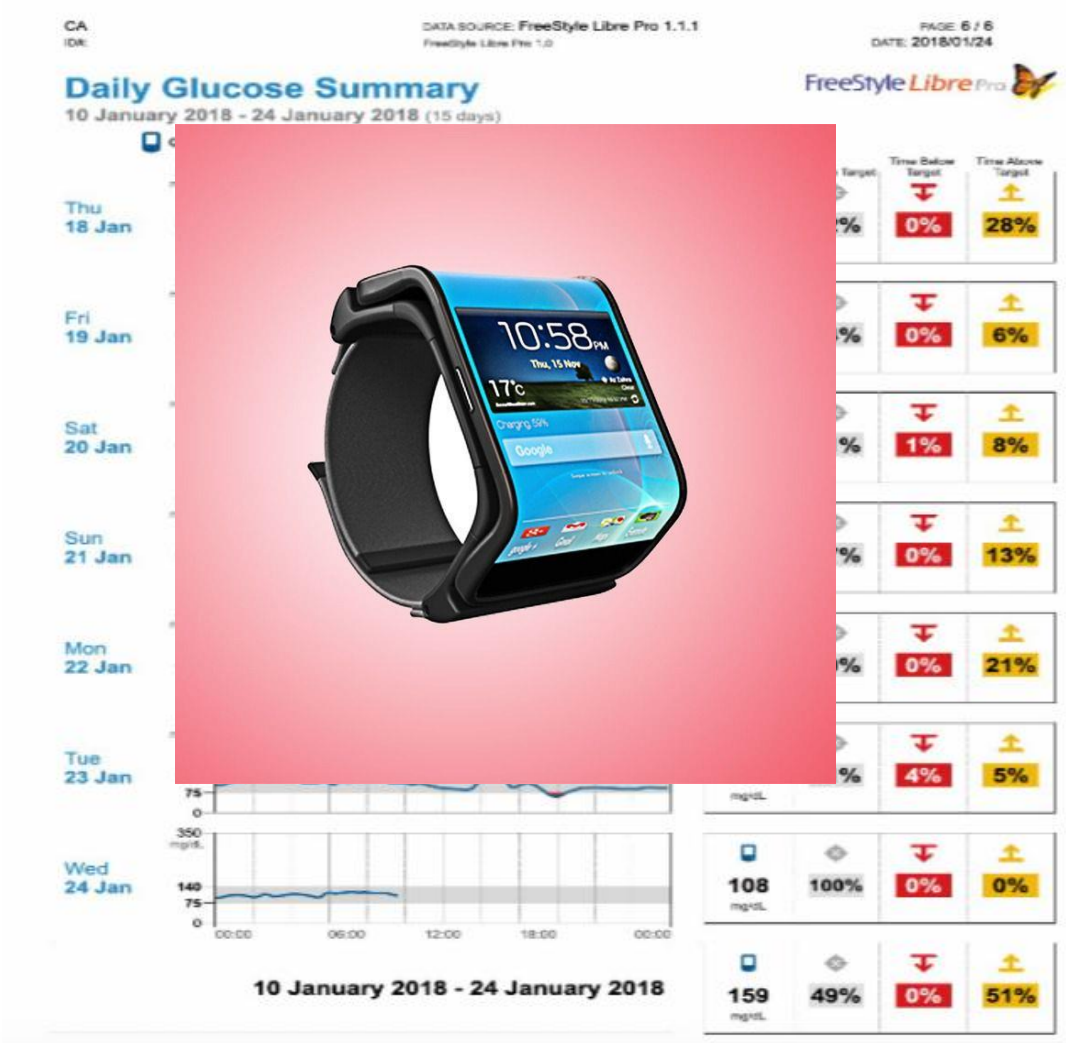
ssociated Conditions

Type 2 Diabetes
Pre-diabetes
Obesity
Hypertension
Heart Disease
Stroke
n-Alcoholic Fatty Liver Disease
Hyperuricemia
Some Cancers
entia (Alzheimer's and Vascular)
nmation (& associated conditions)
Polycystic Ovarian Syndrome
Thrombosis (e.g. DVT)
Kidney Disease
Depression & Anxiety

LIPID PROBLEMS

CANCER

Current Advice Vs Low Sugar/Starch



Considerations

- Ageing population living with chronic multi-morbidity
- **Comprehensive programmes (managing 6 or more risk factors) can reduce total mortality**
- **A personalized program taking responsibility for prescribing, up-titrating and monitoring adherence to cardio protective medications/lifestyle also reduces total mortality by comparison with those that left this responsibility to others outside the programme (van Halewijn et al. 2017)**
- **HYBRID APPROACHES REQUIRED!**

Conclusions

Cardiovascular risk factors – blood pressure, LDL-cholesterol and detection of diabetes – were not managed any better in those attending CRP

Prescription of cardioprotective medications was the same in those attending CRP compared to those not attending

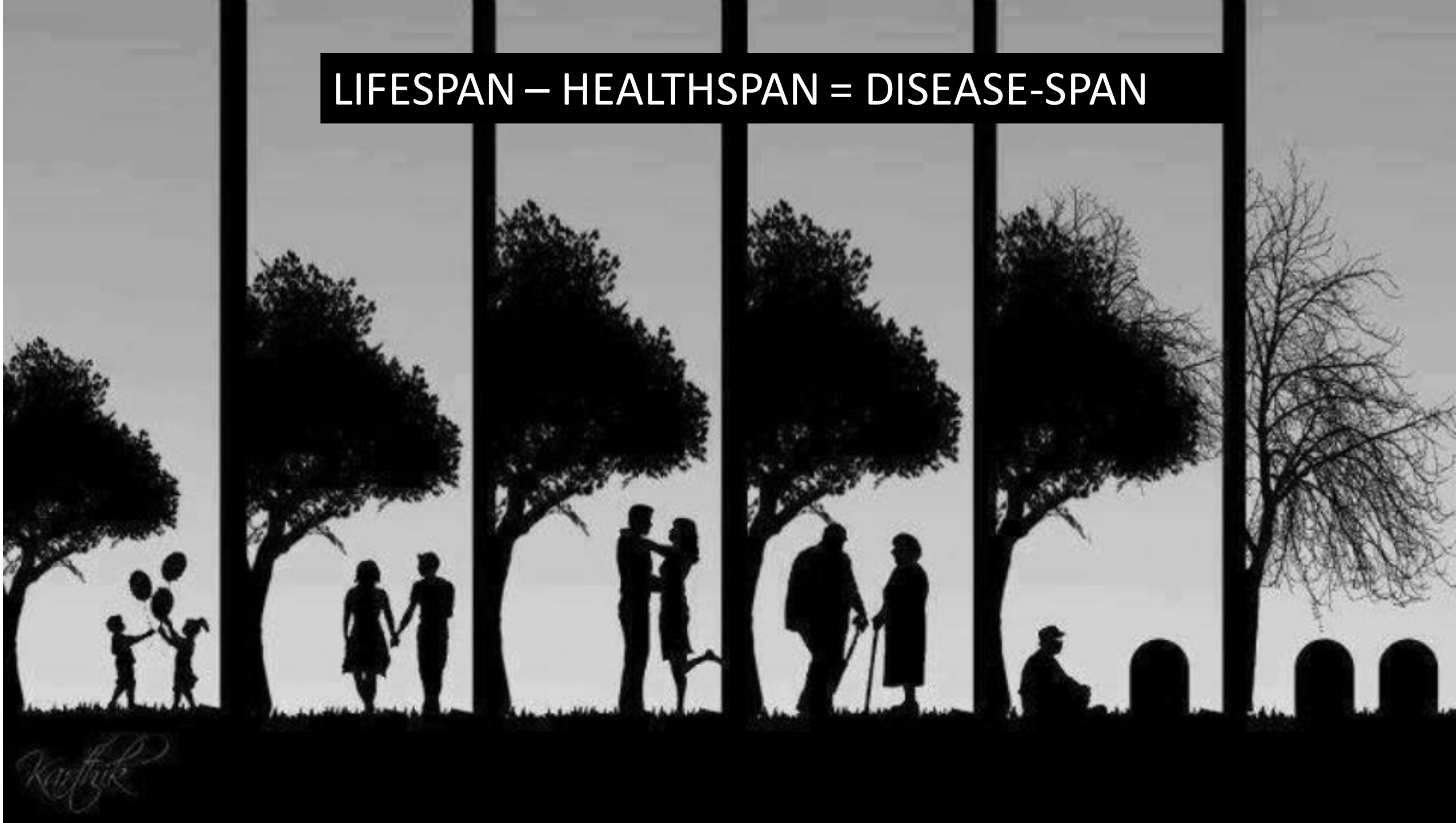
Cardiac rehabilitation programmes are not addressing risk factor control or optimizing the use of cardioprotective medications

WE NEED TO DO THIS BETTER AND FOR MORE PEOPLE!

HYBRID HOME AND COMMUNITY BASED RECOVERY PLANS?

Make it the job of a single specialist hybrid healthcare professional?

HOW? - Train an Army of Hired Heart Disease “Killers”


LIFESPAN – HEALTHSPAN = DISEASE-SPAN

Thank you for listening – Any questions??

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@DrScottMurray

BACPR