Cardiac rehabilitation

COMMENTS RECEIVED FROM EXTERNAL REFEREES AND OTHERS

All reviewers submitted declarations of interests which were viewed by the guideline development group prior to the addressing comments.

Invited reviewers:			**Declared Interests**
BA	Mrs Brenda Anderson	Cardiac Rehabilitation Manager, Aberdeen Royal Infirmary	None
WA	Mrs Wendy Armitage	Head of Supportive Service, Chest Heart & Stroke Scotland	None
BACPR		Dr Joe Mills commenting on behalf of BACPR Council, England	
AMB	Ms Ann-Marie Blaney	Cardiology Nurse Specialist, Wishaw General Hospital, NHS Lanarkshire	Remuneration from employment – Working with individuals who require cardiac rehabilitation input.
AC	Dr Aynsley Cowie	Consultant Physiotherapist in Cardiology, NHS Ayrshire & Arran, Kilmarnock	Non-financial interests – Scientific Officer BACPR
PD	Professor Patrick Doherty	Chair in Cardiovascular Health, University of York	None
GD	Mrs Gillian Donaldson	Lead Cardiac Specialist Nurse, NHS Borders, Melrose	None
LF	Mrs Lorna Forde	Service Lead Specialist, Glasgow & Clyde Weight Management Service, NHSGGC, West Glasgow ACH, Dalnair Street, Glasgow	Remuneration from employment – Service Lead Specialist Glasgow & Clyde Weight Management Service. SIGN council member, Member of Obesity Action Scotland. Remuneration as a partner in a firm – Partner in Ophthalmic opticians practice.
PF	Mr Paul Forsyth	Lead Pharmacist – Clinical Cardiology (Primary Care), NHS Greater Glasgow & Clyde	Remuneration from consultancy or other fee paid work – Consultancy and lecturing fees from Servier, Novartis, Vifor and AZ.
MH	Miss Marie Hurson	Cardiac Nurse Specialist, NHS Shetland, Lerwick	None

SJ	Dr Scott Jamieson	General Practitioner, Kirriemuir Medical Practice	Remuneration as a partner – GP Partner, Kirriemuir Medical Practice. Non-financial interests – RCGP Scottish Council Member, SIGN Council Member.
SL	Professor Stephen Leslie	Cardiologist, Raigmore Hospital, Inverness	Non-financial interests – Consultant Cardiologist who is generally supportive of CR.
AM	Mrs Amanda Manson	Cardiac Specialist Nurse, Balfour Hospital, Orkney	None
AMc	Ms Anne McEwan	Community Cardiac Nurse/Team Leader, Dunfermline and West Fife Community area, Dunfermline and West Fife	None
KM	Mrs Karen McMeeken	Senior Charge Nurse Cardiac Rehabilitation, NHS Dumfries & Galloway	None
DM	Dr David Murdoch	Consultant Physician and Cardiologist, Queen Elizabeth University, Glasgow	None
LS	Ms Lynne Scott	Cardiac Rehabilitation Manager, Greater Glasgow and Clyde Health Board	None
JS	Dr John Sharp	Consultant Clinical Psychologist, Golden Jubilee National Hospital, Clydebank	None
RT	Professor Rod Taylor	Chair of Health Services Research, Director of Exeter Clinical Trials Unit & NIHR Senior Investigator, University of Exeter Medical School	Non-personal support from commercial healthcare companies, organisations - I am the lead for the ongoing portfolio of Cochrane reviews of cardiac rehabilitation, named Scientific Advisors for the NICE clinical guidelines update in heart failure, and chief investigator on ongoing independent research on cardiac rehabilitation funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research Programme (Grant

			Reference Number RP-PG-1210-12004).
VT	Miss Victoria Taylor	Senior Dietitian, British Heart Foundation, London	None
PW	Mrs Patricia White	Team Lead Cardiac Rehabilitation, Astley Ainslie Hospital, Edinburgh	None

Open consultation:			
PG	Dr Peter Gordon	NHS Consultant Psychiatrist, NHS West Lothian, Livingston	Non-financial interests – I petitioned the Scottish Parliament to consider introducing a Sunshine Act for Scotland.
JK	Mrs Janet Kilgour	Specialist Obesity Physiotherapist, NHS Greater Glasgow & Clyde	None
ML	Mr Matthew Larman	Medical Science Liaison Manager, AstraZeneca, Glasgow	Remuneration as holder of paid office – Employee of AstraZeneca
KMac	Mrs Kirsty MacFarlane	Principal Pharmacist, Scottish Medicines Consortium, Healthcare Improvement Scotland	Remuneration from employment – I am employed by HIS – working with SMC.
TMc	Miss Theresa McIntyre	Physiotherapist, Queen Elizabeth University Hospital, Glasgow	Remuneration from employment – Cardiac Rehab Physiotherapist.
LT	Mrs Louise Taylor	Head of Service, NHS Lothian, Edinburgh	Non-financial interests – I am employed by NHS Lothian as manager/head of service of the Heart Manual Department.
KR	Miss Karen Ross	Physiotherapist, West Glasgow ACH, Glasgow	None
Guideline group members			

Section	Comments received		Development group response
General			
	SJ	I just felt that the guideline lost track a bit as to what CR was for - it's to prevent subsequent deaths and events. So every intervention suggested must find evidence for that and I am not sure all the suggestions made did. To put detail on this, the NNT for taking an aspirin to prevent a further MI is 77. Betablockers... well 0.7% reduction in mortality post MI from the unblinded ISIS-1 trial wasn't shown in the 26 trials done before it and the larger COMMIT trial showed no benefit... so it's not got the best evidence... Good news though that a statin will prevent a subsequent MI with a NNT of 39! This is the evidence of what will reduce subsequent MIs and for each intervention the guideline suggests it should reduce mortality and morbidity. Reading the Key Recommendations there is a lot of mention of exercise which will help but it feels like it lacks a bit of meat on the bone... e.g. x intervention will improve mortality rates post MI and should form a component of CR .. or incorporating y into CR improved mortality and reduced the rates of subsequent events and should be delivered by a CR programme.	*The definition of cardiac rehabilitation is that it is to enable patients 'to preserve or resume optimal functioning in their community.'* *There is however evidence that exercise improves mortality.* *Introduction rewritten.* *Interventions to reduce mortality rates from MI are covered in SIGN 149: Risk estimation and the prevention of cardiovascular disease.* *The evidence statements supporting the key recommendations are found in the body of the guideline.*
	MH	I feel this guideline is drafted well, with clear and concise information provided. The evidence based is detailed well in each section of the guideline.	*Thank you.* *No action required.*
	PF	The majority of the guideline is clear (e.g. smoking, diet, exercise, mental health etc). However there is one fundamental problem. Who (i.e. which type of cardiology patient) is the guideline about? I actually have no idea. The guideline discusses CHD at times (which I understand but obviously does not include all forms of HF) and cardiac disease at other	*Statement added to the introduction that this is for patients with all cardiac disease. Some evidence is for specific groups, so we have reported the patient group in the trial, but because it is concerning behavioural change it is possible to extrapolate to the wider cardiac population.*

		times (which could mean anything and would include loads of conditions without an evidence base for CR). This really needs lots of thought as either you look at CHD only and you will exclude many HF patients that are known to benefit from CR or you look at wider cardiac disease you will include many patients who may never benefit or you actually define who does benefit.	
	TMc	Other items which were maybe missing for the protocol were: - Phase 4 discussion - Did not specify in education component of the programme of Heartstart.	*Aspects of Phase 4 are incorporated into the new BACPR pathway, it is just that the terminology has changed.* *The remit cannot include every programme available and Heartstart was not considered to be a priority when setting the key questions.*
	AMB	Style and presentations is excellent, this is well written. The guidelines are an added support to achieve excellence in supporting people within the cardiology community. Of course as sited by (middleton &Roberts 2002) clinical freedom should be exercised to meet the needs of the individual patient.. old quote but does still reflect on the holistic approach.	*Noted, thank you.*
	KMac	It was an interesting guideline but I was reviewing from an SMC perspective therefore because medicines were not part of this guideline, there were no issues with SMC advice.	*Noted, thank you.*
	LT	There are some typos issues-extra commas, e.g. paragraph 3, page 1.	*Amended. The draft will be proof read prior to publication.*
	SL	Well written but like many SIGN guidelines it is a bit bland and falls short of making more firm recommendations or setting standards that would drive services to improve...so implementation is likely to be incomplete and piecemeal.	*The strength of the recommendations reflect the quality and reliability of the supporting evidence.*

	RT	Congratulations on this excellent update. The inclusion of consideration of carers and family is particularly useful. Well done! Thank you for the opportunity to take part in this consultation.	*Thank you*
	KM	I am delighted to have been asked to review this guideline. I am pleased to discover that within NHS D&G we have already started the modernisation of our service following the work of the Scottish Government Champion and fairly quickly will be able to meet this new guideline.	*Thank you*
	DM	It is good that there is a move to a tailored service rather than a one size fits all. It is still very focused on coronary disease when we are trying to enrol patients with other heart disease, especially HF. The multi-disciplinary team approach is not specifically discussed but assumed (dieticians and physiotherapists traditionally but increasingly pharmacists and psychologists). Referral from the community is mentioned but not explored maybe because of lack of evidence but local authority centres and staff are being used in this setting. Is there evidence to support this and to recommend it? As it stands, it reads well and there is little that is controversial and my only criticism is that it isn't 'radical' enough for 2020.	*Statement added to definitions around extrapolation to wider cardiac population.* *The team needs to comprise of healthcare professionals with the appropriate skills and expertise rather than specifying particular specialties.* *At the moment there is little evidence but national policy is towards community-based interventions.*
	AMc	I am happy that this document is comprehensive and accurate.	*Thank you*
	BA	Well written and updated guideline, think CR definitely needs more research in all aspects so that more resource may become available.	*Noted, thank you*
	GD	From my own practice point of view I would have liked to have seen more information about exercise and people with Mod-severe LVSD. It can be concerning about what levels of exercise you should be looking at. Are there any statistics about benefit in this group/causing harm/cardiac arrest etc.. Our health board still uses heart manual which I know some health boards have moved away from. I was disappointed to see there was	*Reference to Heart Failure guideline added to section 1.2.2* *The heart manual could be used as an option within a menu-based plan but does not fit as a standalone intervention in this new model which is based on*

		absolutely no mention of this resource within the guideline. Is there research in this area is it still recommended as a good resource to use. We have recently had input from psychologist on the back of Heart failure audit and step approach to psychological intervention. Would it be worth sharing in an annex an example of a step by step approach to anxiety and depression management within this guideline that could be adapted to each health board? I like the way the guideline is set out as other SIGN guidelines and I am used to looking at these in this format. Apart from my previous comments a lot of information in the guideline and I appreciate all the hard work that must go into putting this together. It is apparent that there appears to be a small evidence base out there for many of our cardiac rehabilitation interventions but hopefully with future research the evidence may become more compelling. I assume evidence base is more limited as rehab is by and large nonprescriptive and hopefully individualised. Thank you for asking me to review. I hope some of my comments are of use.	*individualised assessment and care plans.* *It would not be appropriate as the care plan should be individualised.* *Thank you* *Agree* *Thank you*
	KR	Opinion should not drive change in current practice. Would like to see, as appropriate, more recommendation for further research.	*Recommendations for research are included in section 11.2 of the guideline.*
	LF	I think this is excellent progress towards implementing the new CR pathway. I am also aware of the difficulties where evidence if not available at the highest level for inclusion in recommendations however I would suggest that intersecting of this guidelines with the condition specific Diabetes and Obesity guidelines would be useful to allow at assessment signposting if not referral to the specialist services for these conditions.	*Reference to the obesity guideline has been added in the weight management section.* *Other relevant guidelines will be linked on the website.*
	BACPR	<u>Interchangeable terms</u> The 'inclusion' group are potentially confusingly referred to by a number of terms: coronary heart disease, cardiac disease, cardiovascular disease. There is no real mention of which	*Further explanation added to definitions section.*

		specific groups are "in-scope" and which are not. Strong evidence exists for patients with ACS and after revascularisation and also for heart failure with reduced EF (and to some extent with preserved EF). Surely the aim of the guideline would be to encourage all programmes to seek to recruit 100% of patients for which the evidence base for CR is strongest.....and to recommend the benefits of CR for other conditions but noting the lack of evidence and with a call for research to be performed. Also consider replacing the word "exercise" with physical activity - particularly when discussing behaviour change and long term goals. <u>Start of cardiac rehabilitation</u> There appears to be no recommendation for when cardiac rehabilitation should start. There are good data regarding reduction in 30-day re-admission rates for patients attending CR and this is a big commissioning factor when persuading the payers to invest.....this will only be achieved if referral, recruitment and assessment all start very early. What about recommending contact within 72hrs of discharge/referral and assessment with 10 days?? <u>Health Behaviour Change (HBC)</u> The guideline mentions the importance of support for HBC. There is a focus on psychological interventions in the guideline to reduce psychological distress. However, guidance on the use of psychological theory and effective techniques to promote HBC is lacking. Given the central role of HBC as a core component of cardiac rehabilitation as well as an integral part of other components in CR, it would be given further attention in the guideline. A systematic survey of evidence regarding the effectiveness of behaviour change techniques (BCTs) [1, 2] and models used to support HBC would have been useful to	*Terms are different and reflect what was used in the evidence cited. Definitions of physical activity and exercise have been added.* *Not aware of any evidence for this but intuitively assessment should be early. Statement added to section 1.2.1.* *Heron paper added*

		conduct. The guideline alludes to the concept of self-efficacy and long-term behaviour change but not the earlier stages of intention formation, motivation, planning, engagement and action. HBC may therefore warrant a separate section. 1. Michie S, Richardson M, Johnston M, Abraham C, Francis J, Hardeman W, Eccles MP, Cane J, Wood CE. The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. Annals of behavioral medicine. 2013 Aug 1;46. 2. Heron N, Kee F, Donnelly M, Cardwell C, Tully MA, Cupples ME. Behaviour change techniques in home-based cardiac rehabilitation: a systematic review. Br J Gen Pract. 2016 Oct 1;66(651):e747-57 <u>Other psychological issues</u> The draft guideline gives important recommendations on psychological intervention for anxiety and depression however, there needs to be further attention given to other psychological factors. Individual beliefs,[3] attitudes, intentions, skills and knowledge re the individual's condition are important predictors of engagement with target behaviours to reduce risk and coping with a long term cardiac condition. Beliefs and misconceptions are mentioned as part of vocational rehabilitation but the evidence base has not been surveyed fully in this guideline to provide recommendation on the effectiveness of interventions or techniques to change beliefs and address misconceptions other than in the context of clinical anxiety or depression. 3. Jolly K, Lip GYH, Taylor RS, Rafferty J, Mant J, Lane D. The Birmingham rehabilitation uptake maximisation study (BRUM): a randomised controlled trial comparing home-based with centre-based cardiac rehabilitation. Heart	*The guideline cannot cover everything and this was considered to be too detailed for inclusion.*

		2009;95:36-4 <u>Home-based rehabilitation/Increase access to cardiac rehabilitation</u> The evidence for home-based intervention for improvements in a number of important clinical outcomes and its equivalence with centre-based rehabilitation is compelling [4-8]. However, there is little mention of the benefits associated with this directly evidenced alternative apart from reference to technology-based interventions. There is no comment on the opportunities home-based interventions have to improve access to cardiac rehabilitation while considering the barriers such as rural areas, transport difficulties, and dislike of group rehabilitation sessions[7,9]. This has the potential to undermine the comprehensiveness of the guideline and accentuates the impression of cardiac rehabilitation as a centre based activity despite mention of the need to adopt a patient centred approach delivered in a variety of settings. *4. Cooper AF, Weinman J, Hankins M, Jackson G, Horne R. Assessing patients' beliefs about cardiac rehabilitation as a basis for predicting attendance after acute myocardial infarction. Heart. 2007 Jan 1;93(1):53-8.* *5.Taylor Rod S, Dalal H, Jolly K, Zawada A, Dean Sarah G, Cowie A, et al. Home-based versus centre-based cardiac rehabilitation. Cochrane Database Syst Rev 2015(8).* *6.Blair J, Corrigall H, Angus NJ, Thompson DR, Leslie S. Home versus hospital-based cardiac rehabilitation: A systematic review. Rural and Remote Health 2011;11: 1532.* *7. Dalal H, Doherty P, Taylor R. Cardiac rehabilitation. BMJ 2015; 351:h5000. Full text available at http://www.bmj.com/content/351/bmj.h5000.full?ijkey=lc3zT7QrRx77zOS&keytype=ref*	*The guideline focuses on individualised care which can be carried out in whichever setting is best for the individual patient.*

		8. Dalal HM, Evans PH, Campbell JL, Taylor RS, Watt A, Read KLQ et al. Home-based versus hospital-based rehabilitation after myocardial infarction: A randomized trial with preference arms - Cornwall Heart Attack Rehabilitation Management study (CHARMS). Int J Cardiol 2007;19:202-211. *9. Menezes AR, Lavie CJ, Milani RV, Forman DE, King M, Williams MA. Cardiac rehabilitation in the United States. Prog Cardiovasc Dis 2014;56:522-9.*	
Section 1			
1.1	PD	If this statement is to be more than speculative it requires a reference. Could use NACR report 2015 (part 4) which shows unacceptably high variation in the timing and duration of CR. If the SIGN CR guidance is published in 2017 you can use the NACR 2016 report which comes out on the 2nd Dec 2016. It might be best to use the 2016 version as it will add to the longevity of the SIGN reference base. Ian will receive a copy as he in on the NACR Steering Group.	*This section has been revised. Where it is not referenced it is reflecting the opinion of the guideline development group on services in NHS Scotland.* *Other sections have been updated to include background information from the NACR 2016 report.*
	PD	If SIGN intends to use the BACPR standards and core components wouldn't it seem logical to utilise the BACPR approach and underpinning evidence.	*SIGN have their own established methodology for the evidence review.*
	PD	The new BACPR standards and core components are almost ready for publication with a final meeting in Dec. The new version differs and will have six core components and six standards. Is it important to SIGN that these will differ to what you propose? If so it might be worth liaising with the BACPR to get sight of the emerging standards and use the revised figure 1. I have contacted BACPR and Sally Hinton who suggests that Dr Joe Mills will also raise this in their feedback.	*These have now been incorporated.*
	SJ	Should this include data as to how CR reduces subsequent cardiac events? We are assuming people who undertake CR are at lower risk of a subsequent event? With so many choosing not to, do they have a higher risk? If so we need to say that	*Sentence on mortality benefits added to introduction.*

		highlighting the need to get people to take this seriously.	
	MH	Clear and concise introduction.	*Thank you*
	LT	The quote given from the Scottish Government reference is not in the publication you list. No reference using the wording '…central focus on specialised assessment..' is in this publication. Please re reference correctly. To say that the BACPR's standards are 'largely aspirational', needs refined. The standards were put together by teams of experts and were based on a thorough review of the evidence base to date in CR. They are standards with competencies and are there for CR teams to work towards. Where, is the evidence (please reference) that the new model will be 'more complex to implement?' What do the author's mean by 'more complex?' If it is that 'complex to implement' perhaps a feasibility study is required.	*New reference added* *Rewritten* *Wording amended to 'potentially more complex'.*
	SL	Typo page 1 paragraph 3 'clinically, competent' should be 'clinically competent' – extra comma.	*Corrected*
	KM	With 25 years experience working as a C/R Sister in NHS D&G it is with great excitement we await the publication of a much needed update to Cardiac Rehab SIGN guideline.	*Noted. No action required.*
	AC	BACPR Standards and Guidelines should be changed to BACPR Standards and Core Components	*Corrected*
	DM	The emphasis is understandably on Coronary Heart Disease but patients with chronic heart failure, which may not be due to coronary disease, and implantable devices (ICD, CRT) are also being referred to cardiac rehab and there is an evidence base for CHF. There is no mention here of these groups.	*Additional statement added to definition.*
	BA	Accurate and correct.	*Thank you*
	GD	Good explanation of need. I agree very limited evidence and may prove difficult for some cardiac teams to take forward because of this if further resource is required through professional input.	*Noted, thank you.*

	BACPR	The quotation from the Scottish Government 2020 Vision and the supplied reference do not match. <u>BACPR Model – Core Components of Cardiac Rehabilitation</u> The BACPR Standards & Core Components [2012] are in the process of being revised and updated in line with current evidence. We are hoping to be able to provide SIGN with an updated version of this model in February 2017. We would query the use of the term 'largely aspirational' to describe BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation. The Standards and Core Components are based on the latest developments in the clinical evidence base for cardiac rehabilitation (as will the revised document). The pathway for the Standards & Core Components has been compiled on the basis that there is evidence to demonstrate that it is <u>achievable</u>, not simply aspirational.	*New reference added.* *Added, thank you.* *Amended*
	JK	• Suggest amendments to wording (4th paragraph), i.e. using '21st century' instead of 'modern'. • Suggest reword/rephrase 'has less to do with' .....as in my opinion physical recovery from cardiac illness remains a key target, see suggestion below. Cardiac rehabilitation in the 21st century, whilst recognising the importance of physical recovery from cardiac illness, has a strong focus on 'psychological, behavioural and lifestyle implications of the diagnosis of CHD and how these can be modified with effective interventions'. (p1) Or Whilst this guideline understands the importance of physical recovery from cardiac illness, it recognises that cardiac rehabilitation in the 21st century, needs to incorporate, 'psychological, behavioural and lifestyle implications of the diagnosis of CHD and how these can be	*Disagree, prefer 'modern'*

		modified with effective interventions	
1.2.1	MH	Clear and concise.	*Thank you*
	PD	There is additional trial evidence and meta-analyses for comprehensive or what some call multicomponent CR that might be worth putting in. The RAMIT study be Robert West. Rauch B, Riemer T, Schwaab B, et al. Short-term comprehensive cardiac rehabilitation after AMI is associated with reduced 1-year mortality: results from the OMEGA study. Eur J Prev Cardiol 2014; 21: 1060–1069. Rauch B, Davos C, Doherty P, Saure D, Metzendorf M-I, Salzwedel A, Vo¨ller H, Jensen K, Schmid JP. The prognostic effect of cardiac rehabilitation in the era of acute revascularization and statin therapy: a systematic review and meta-analysis of randomized and non-randomized studies. The Cardiac Rehabilitation Outcome Study – CROS. European Journal of Preventive Cardiology 2016. 0(00) 1–26. DOI: 10.1177/2047487316671181	*These papers are cited in the Anderson Cochrane review which we have now referenced in sect 1.1*
	PD	The review by Anderson et al 2016 is in your reference list and remains aligned with the BACPR standards.	*Noted*
	PD	'to provide greater emphasis on long-term self-management strategies' I assume this will also include evidence synthesis around the effectiveness of self-management strategies with cardiac patients.	*Self-management is addressed in section 5.5*
	PF	'....This guideline provides recommendations based on current evidence for best practice in the rehabilitation of patients with coronary heart disease....' Approximately one third of HF-REF patients do not have CHD, does this guideline not apply to all HF-REF? What about HF-PEF? The majority of HF-PEF patients do not have CHD. This point is very inconsistent	*See earlier comments on definition*

		throughout the guideline. Is this guideline about CHD or wider cardiac disease? If it's wider cardiac disease, what does this encompass (e.g. hypertension, AF, HOCM, congenital heart disease etc etc). The reader needs to know.	
	LT	There is and always will be a need for further research into CR, however we are not convinced that all aspects of high quality evidence on CR available has been addressed in these guidelines and as such all recommendations included. Health beliefs, misconceptions, adult learning, skills and knowledge (some included in vocational rehab only) have not been reviewed fully. The guideline is also heavily weighted in no.4 (expert opinions).	*The guideline has a limited remit. It is not feasible to cover every aspect of cardiac rehab in one guideline.* *SIGN methodology uses the best available evidence. Level 4 includes other evidence-based guidelines.*
	VT	Inclusion of wider evidence base to accommodate broader risk reduction literature is welcome.	*Thank you*
	KM	Nicely mirrors the BACPR core components.	*Thank you*
	DM	Again emphasis on CHD but comment that it was important to move away from individual sub-groups. Use the term 'heart disease' or 'cardiovascular disease' rather than coronary heart disease? ? Typos - 'practise' should be 'practice', lines 3 and 8.	*Changed to heart disease* *Typo amended*
	BA	Relevant.	*Thank you*
1.2.2	PG	Disease definitions have widened – this across medicine.	*No action required*
	LT	Paragraph 2 In 2012 were ‘patients advised to rest for several months after an MI?’. Please re write this section as not clear if this statement is associated with BACPR quote above it, which was published in 2012? To state that, ‘the majority of patients with CHD no longer need rehabilitation in the traditional sense’, needs defined and referenced. What is ‘traditional’ and common place in one area may not be in another?	*This is discussing common practice so the group do not think this needs amended.*
	KM	Appreciate the more up to date definition from the original WHO definition.	*Noted, no action required*
	AC	I think it's time to move to the title 'Cardiovascular Rehabilitation'. I think this change could be made to the title	*The title was discussed at length in guideline group meetings but it was felt*

		with little adverse consequence. Health and social care professionals are aware that the term 'cardiac rehabilitation' is becoming outdated.	*that it was outside the remit of the guideline to change terminology which is used across the UK. It is noted in the introduction that it is outdated.*
	BA	Satisfactory	*Thank you*
	GD	Agree that term rehabilitation is outdated but understand outwith remit of group. Hopefully something that could be taken forward from this?	*The guideline group agree that this needs wider debate, with patient consultation.*
	KR	Term CR fits BACPR definition. The rest reads as one side of an opinion. Not balanced. No patient consultation. Doesn't openly reflect medical definition. Not relevant in this document. Sets the wrong tone early.	*See responses to AC and GD*
	BACPR	This feels a missed opportunity to widen the definition to 'cardiovascular rehabilitation', which would more accurately describe the intake and remit of many programmes.	*See responses to AC and GD*
	WA	The guideline suggests that it is moving away from pathology/diagnosis to 'needs based support'. How do we embrace non CHD cardiac conditions e.g. cardiomyopathy, inherited arrhythmia?	*The evidence base is not strong for this group. Further research is needed. Advice could be extrapolated from other cardiac groups.*
1.2.3	LT	Target users should also include academics, researchers, universities.	*Added*
	KM	MDT approach essential.	*Agree*
	BA	Accurate	*Thank you*
	GD	Agree	*Thank you*
1.2.4	AM	Haven't seen this.	*Patient version will be developed once the guideline is finalised.*
	BA	Yes	*No action required*
1.3	BA	Accurate and appropriate.	*Thank you*
1.3.1	PG	SIGN compare poorly compared to NICE on standard and thoroughness of declaration of interests. SIGN should reject panellists on Guideline development who have any financially vested interests. SIGN should be held to account if harm results from biased evidence incorporated into any Guideline. SIGN could support a Sunshine Act for Scotland and a central, open, searchable register that would be cheaper and more effective to maintain.	*Opinion noted.* *There were no competing interests declared in this group.* *SIGN methodology mitigates against bias, however, it is impossible to eliminate completely. Please note this is guidance and does not need to be followed if a practitioner does not think it is appropriate to do so.* *It is outwith SIGN's remit to comment on political issues.*
	LT	'SIGN acknowledges bias' so how does SIGN offset this?	*SIGN's methodology mitigates against bias. It is described fully in the*

		Apart from being more inclusive on the evidence, perhaps the use of experts with knowledge, experience and educational skills in self management interventions should be on the development group, or at minimum, the steering group. The concept is mentioned 14 times in the document.	*methodology manual SIGN 50.* *These skills are reflected in the make up of the guideline group. The group are disappointed that their expertise has not been recognised.*
	BA	Satisfactory	*Thank you*
1.3.2	PG	Why not have: (1) a critical thinker as a panellist (2) an ethicist (3) a philosopher	*See response to LT above.*
	PF	Is this section needed in this particular guideline?	*Removed*
	BA	Not sure this is relevant, but this is only my opinion.	*Removed*
1.3.3	BA	Satisfactory.	*Thank you*
	JK	Question: Regarding separate educational support for partners, is this something which could be delivered using technology?	*There was little evidence on this.*
Section 2			
General	SJ	The biggest change we can make to patients in secondary prevention is medication concordance. No mention of this - it fits well into 2.3...	*There was a disappointing lack of evidence so it was not possible to make a recommendation.*
	PW	Found the wording contradictory in that all patients should be offered exercise as part of cardiac rehabilitation. Prior to this it states that the assessment should lead to individualised care plan which may not necessary include exercise as a patient need	*Individualised care plan is based on key components of CR, including exercise. The recommendation is that it should be 'offered'.* *Following discussion and group consensus the first recommendation has been removed from key recommendations.*
	KR	Highlight the areas that should be audited to evaluate the need for implementation. May already reflect current service provision.	*Audit points are listed in section 10.3.* *Additional points have been added.*
2.1	PF	'..Patients with cardiac disease should be offered a cardiac rehabilitation programme which includes an exercise component to reduce cardiovascular mortality and improve quality of life..' Which patients? What type of cardiac disease? This could mean many different things. This is very unclear throughout the whole document	*Explanation added to introduction*
	PD	1st GPP So good to see this as a leading	*Noted, thank you*

		recommendation. Later in the guidance you also recommend reassessment which concurs with the BACPR old and new standards	
	LS	Seems odd to put a good practice point in the key recommendations.	*This is a core part of the guideline so the group felt it was essential that it was included.*
	LT	Add in the actual names of interventions 'available', otherwise you end up with a costly menu of too much choice, (whether public, private or 3rd sector) and not a clear exit for staff to recommend to. Staff also need to know what happens in these organisations, be trained in the use of a tool or system in order to explain even at basic level to the patient. Selected interventions should be evidenced and effective; the organisers should know that they/their resources are 'on the list' and perhaps have representatives on the guideline group as they have a responsibility to maintain the governance of their resource.	*This is too detailed and outside the remit of the guideline. What is available or offered is an implementation issue for local health boards.*
	KM	The modernisation of C/R to include an individualised assessment with a plan of care tailored to that individual is an exciting development.	*Noted*
	GD	change of wording? an individualised assessment culminating(leading) in a care plan and.....	*The group prefer to keep the term 'leading to' as it is plainer language.*
	LF	Agree.	*Thank you*
	WA	Should this begin - 'all patients following a cardiac related event or diagnosed with a long term cardiac condition should be considered for cardiac rehabilitation' ?	*The preference is to keep the wording 'all patients referred'. The introduction to the guideline explains who should be offered cardiac rehabilitation.*
2.2	PF	Why is smoking cessation not a key recommendation?	*The group agreed to add this is in.*
	LS	2nd recommendation should it not be patients RECEIVE rather that OFFER rather than individual CHOICE should it not be NEED	*The wording reflects that the plan should be established in discussion with the patient.*
	LT	Range of settings' should be defined in line with NACR (2016) to include community and home based. Email is another form of communication that could be used	*Evidence is 'Benefit appears to be independent of ... whether it takes place in a hospital, home or community setting.* *Email is not commonly used to contact patients.*
	KM	Not too prescriptive to length of programme and duration is a sensible recommendation.	*Thank you*

	AC	I'm not sure why these recommendations have been highlighted specifically - why is e.g. smoking cessation not included here?	*Smoking cessation added and first exercise recommendation removed.*
	BA	Satisfactory	*Thank you*
	GD	I did not think this sentence made complete sense to me. A range of strategies, including telephone follow up, video, contact, nutritional tools.... I don't think it is clear what sort of video input you are considering or contact. Should these words be together? video contact. Is it just a case of removing comma?	*Reworded to educational tools* *Reworded, should have been 'contract'.*
	LF	In the cardiac rehab programme execise component is strongly recommended as well as a more detailed recommendation for individualised exercise component recommendations weight management is not directly recommended if appropriate and seems to be covered under dietary advice delivery styles	*Diet is a core component of CR and weight management is part of that. The remit focused on methods of weight management rather than efficacy of weigh management per se.*
	WA	It is disappointing that there is no mention of the other known lifestyle risk factors here, given the criticism about previous models having a primary focus on exercise. How relevant is this to those who exercise within and exceed recommendations whose conditions are secondary to other influencing factors e.g. familial hypercholesterolemia or nicotine addiction?	*Smoking cessation recommendation has been added and the first exercise recommendation removed to achieve a better balance.* *Further recommendations on smoking cessation and dietary advice have been added to the key recommendations.*
2.3	SJ	This needs expanded to include behaviour change such as smoking cessation and medication concordance. Just because there is no evidence as to how to best do this, they are by a long way the best ways to reduce risk of subsequent cardiac event and are not mentioned at all as key recommendations for CR. We saw in section 5.1 that there should be equal weighting for the lifestyle risk factors - but then only recommend 1 in the summary?	*The group agrees intuitively but did not find supporting evidence for other lifestyle changes (see section 5.5).*
	LS	Psychoeducation - should include other lifestyle changes	*See response to SJ*
	PD	Psychoeducation...adherence to exercise.	*See response to SJ*

		is this just exercise or all tailored lifestyle interventions?	
	LT	There is recognition of the importance of health behaviour change. However there is no articulation of how this is best supported or mention of the latest up to date evidence on interventions that successfully employ behaviour change techniques to support cardiac patients achieve change. See: Heron N, Kee F, Donnelly M, Cardwell C, Tully MA, Cupples ME. Behaviour change techniques in home-based cardiac rehabilitation: a systematic review. Br J Gen Pract. 2016 Oct 1;66(651):e747-57	*Heron paper added*
	KM	Delighted about the acknowledgment of the importance of psychoeducation to improve patient compliance with lifestyle change.	*Noted*
	AC	As above	*See previous response*
	BA	Satisfactory	*Thank you*
	GD	I looked up some definitions of psycho education as I was not 100% familiar with this term. The definitions can appear differently. Some definitions pertain to psychoeducation as education offered to individuals who already have a mental health condition and their families to empower them. Whereas others pertain to the education for those with or without current mental health issues. "Most clinicians would agree that patients with any chronic disorder – such as diabetes, epilepsy or ischaemic heart disease – should, as part of their routine care, be given accurate information about their diagnosis, treatment and prognosis and about how they can help themselves to stay well. In broad terms, this kind of information can be considered 'psychoeducation'. Article Psychoeducation for bipolar disorder Daniel Smith, Ian Jones, Sharon Simpson Advances in Psychiatric Treatment Mar 2010, 16 (2) 147-154; DOI: 10.1192/apt.bp.108.006403 Do we need to use this word, it may	*The group think it is clear enough. The definition is education for those with or without current mental health issues.*

		confuse? Can we not just say education by way of goal setting, problem solving etc.. should be considered	
	LF	..... including dietary change not just exercise.	*No evidence was identified to support this (see section 5.5)*
	WA	Is goal setting etc only relevant to exercise?	*No evidence was found to support other interventions (see section 5.5)*
2.4	LT	The Heart Manual programme (2016 ed.,) uses a cognitive behavioural approach to support patients. Improvements in anxiety and depression using the Heart Manual are well documented in the literature yet there is no direct reference to this in the proposed guideline. References 1.Heron N, Kee F, Donnelly M, Cardwell C, Tully MA, Cupples ME. Behaviour change techniques in home-based cardiac rehabilitation: a systematic review. Br J Gen Pract. 2016 Oct 1;66(651):e747-57. 2.Taylor Rod S, Dalal H, Jolly K, Zawada A, Dean Sarah G, Cowie A, et al. Home-based versus centre-based cardiac rehabilitation. Cochrane Database Syst Rev 2015(8). 3.Blair J, Corrigall H, Angus NJ, Thompson DR, Leslie S. Home versus hospital-based cardiac rehabilitation: A systematic review. Rural and Remote Health 2011;11: 1532. 4. Dalal H, Doherty P, Taylor R. Cardiac rehabilitation. BMJ 2015; 351:h5000. Full text available at http://www.bmj.com/content/351/bmj.h5000.full?ijkey=lc3zT7QrRx77zOS&keytype=ref 5. Dalal HM, Evans PH, Campbell JL, Taylor RS, Watt A, Read KLQ et al. Home-based versus hospital-based rehabilitation after myocardial infarction: A randomized trial with preference arms - Cornwall Heart Attack Rehabilitation Management study (CHARMS). Int J Cardiol 2007;19:202-211. 6. Jolly K, Lip GYH, Taylor RS, Rafferty J, Mant J, Lane D. The	*The group noted LT's declared interest with the Heart Manual.* *Heron paper added.* *The other papers are home-based vs centre-based which is outside the remit of the guideline. A sentence has been added to the introduction explaining that this has not been addressed as individual care plans accommodate either setting.*

		Birmingham rehabilitation uptake maximisation study (BRUM): a randomised controlled trial comparing home-based with centre-based cardiac rehabilitation. Heart 2009;95:36-42. 7. Lewin B, Robertson IH, Cay EL, Irving JB, Campbell M. Effects of self help post-myocardial-infarction rehabilitation on psychological adjustment and use of health services. Lancet 1992; 339(8800):1036-40.	
	AM	I've been unable to access the full paper at 6.4.2 but would have liked to have read it- as building 9 hours of physically supervised relaxation into the class (if that's what this paper recommends) would be difficult within our current set up.	*See comments under section 6.4.2*
	AC	As above.	*See previous response*
	BA	Satisfactory	*Thank you*
	WA	The term 'psychosocial health' is used but how does this relate to social recovery? What evidence is there in relation to social/ peer support in recovery within the context of CR? This is important as social isolation and lack of social capital has a detrimental impact on physical and psychological wellbeing, increasing risk of admission, delayed discharge, NHS contact and mortality	*Section 6.1 notes that anxiety and depression are linked to recovery, however social support was outside the remit of the guideline.*
Section 3			
3.1	PD	'Relevant to Scotland' Is it worth defining the criteria around Relevant to Scotland.	*The guideline is primarily for healthcare professionals in Scotland so this is probably not necessary.*
	PD	Ist para There is level 2 research informing this area. Sumner J, Grace S, Doherty P. Predictors of Cardiac Rehabilitation Utilization in England: Results from the National Audit. Journal of the American Heart Association Cardiovascular and Cerebrovascular Disease (Elec). 2016; DOI: 10.1161/JAHA.116.003903	*Thank you. The first para is an introduction to the section. The citation suggested is of similar quality to those included in the Cochrane review cited and provides similar findings.*
	SJ	Referral should come directly on discharge from secondary care and not from primary care. yes the in-patient time may be getting shorter, but to add another layer of admin into the process to see CR carries extra	*Agree, the intent was to see if this would give additional benefit.*

		risk that no referral at all is made. We don't always get discharge letters unfortunately even in this modern era! We should however have access where a patient has defaulted on a CR attendance and be able to direct them to where they can call to get back into the system.	*Agree. Wording changed.*
	SL	For those providing cardiac rehab it was not very clear exactly which patients should be referred to Cardiac Rehab – it does mention 'Cardiac Disease' – does this then imply that all patients with symptomatic cardiac disease including AF, breathlessness and angina should be referred? For those patient referred it was not clear if cardiac rehab should provide long terms or follow up support. E.g. initial assessment and exercise classes are covered but should patient be seen at 3, 12 months?? If so are there discharge criteria?	*Addressed in the definition.* *This was not included in the remit because it was unlikely to have evidence.*
	RT	Excellent to see partner/family involvement.	*Thank you*
	KM	The challenges of being able to include patients with all their comorbities and long term conditions is acknowledged	*Noted*
	PW	I welcome the opportunity for health care professionals in the community to be able to refer patients for CR. However I feel this is an opportunity to address the lack of referral from the acute sector and address this with our cardiology consultant colleagues.	*This is an implementation issue and outwith the guideline's remit.*
	BA	Satisfactory	*Thank you*
	GD	A lot of cardiac pts come through the secondary care system if they have an acute event/hospital admission/clinic referral/intervention and where there is resource available can normally access some sort of input from specialist cardiac nurses/team. Many cardiac rehab teams lie within secondary care and there is not the resource to take on more and more people for "rehab" without adequate funding being put into place. I am not sure a problem lies with referral from primary care if we pushed for referrals and advertised we could get referrals but would be saturated. 2020 vision pushes	*General comment. Noted, but no action required.*

		towards management in primary care, we should maybe focus resource/research looking at having more specialised chronic disease nurses within every primary care practice to deal with the heart disease pts who have diabetes, who have COPD etc.. and a place to be referred onto from secondary care?	
	BACPR	If we accept that long term medical risk factor management and adherence to cardioprotective therapies (e.g. secondary prevention) are core components of CR then there is one very relevant trial from Scotland: *Campbell NC, Ritchie LD, Thain J, Deans HG, Rawles JM, Squair JL. Secondary prevention in coronary heart disease: a randomised trial of nurse led clinics in primary care. Heart 1998;80:447-52* and an audit from Cornwall that demonstrated improved secondary prevention when primary care is involved in the long term care of patients with CHD. *Murchie P, Campbell NC, Ritchie LD, Simpson JA, Thain J. Secondary prevention clinics for coronary heart disease: four year follow up of a randomised controlled trial in primary care. BMJ 2003;326:84*.). A letter published in the BMJ in 2015 gives additional references : *Dalal, HM; Wingham, J; Taylor, RS. Acute coronary syndromes: key role of rehabilitation and primary care in long term secondary prevention. BMJ 2015;351:h6350.*	*Thank you for the suggestions.* *The Campbell papers are about secondary prevention rather than cardiac rehab therefore outwith the guideline's remit. Audits and letters are of insufficient quality to be included in the guideline.*
3.2	KM	Has always been a bit difficult to interpret as most studies historically define uptake as attendance at an outpatient exercise class. We should not forget the engagement with patients during the inpatient stay of their recovery.	*General comment. Noted, but no action required.*
	PW	The need for improved outcome data to record quality information.	*Noted*
	BA	Using Scottish data here would be pertinent	*Unfortunately there are no Scottish data available.*
3.2.1	KM	More research required	*Recommendation for research added.*
	BA	Satisfactory	*Thank you*
	BACPR	We are unsure as to the evidence base for the improvement in uptake for women-only CR as to our knowledge this had not been proven.	*The guideline states 'tailored to women' which is different to women-only CR, and is reporting one study from a systematic review.*

3.2.2	JS	There is a recommendation that interventions to promote self-efficacy should be considered. However, this recommendation appears to be based on an individual study which suggests self-efficacy is a mediating factor in enhancing PA rather than any evidence that interventions exist to enhance self-efficacy. The recommendation should be reworded to convey the potential value in psychological theory-driven interventions to improve engagement with CR.	*Recommendation is based on RCTs and observational studies. Psychological interventions were not included.* *The recommendation is 'may be considered' due to the quality of the evidence base and is intended to say that self-efficacy can improve adherence so interventions to encourage self-efficacy may be worth trying.*
	BA	Accurate	*Thank you*
	BACPR	Allowing patients a choice can also help to improve adherence to rehab and is recommended in the 2013 NICE guidance [CG 172] on secondary prevention post MI. The following publications support providing patient preference: Wingham J, Dalal HM, Sweeney KG, Evans PH. Listening to patients: choice in cardiac rehabilitation. Eur J Cardiovasc Nurs 2006;5(4):289–94 Dalal H, Evans PH, Campbell JL, Taylor RS, Watt A, Read KL, Mourant AJ, Wingham J, Thompson DR, Pereira Gray DJ. Home-based versus hospital-based rehabilitation after myocardial infarction: a randomized trial with preference arm – Cornwall Heart Attack Rehabilitation Management Study (CHARMS). Int J Cardiol 2007;119:202–11.	*The group agree but this is covered elsewhere in the guideline (eg section 4.2, individual care plans).*
3.3	KM	Crucial to include Partners/carers to ensure adherence. The re introduction of a Spouse group in programmes should be considered?	*This is covered by the GPPs.*
	BA	Satisfactory	*Thank you*
	BACPR	There is emerging evidence for the needs of caregivers in patients with heart failure involved in CR Wingham, J; Frost, J; Britten, N; Jolly, K; Greaves, C; Abraham, C; Dalal, H; REACH-HF research investigators. Needs of caregivers in heart failure management: A qualitative study. Chronic Illness 2015;11(4):304-319. This is currently being evaluated by the REACH HF Study: Taylor, RS; Hayward, C; Eyre, V; Austin, J; Davies, R; Doherty, P; Jolly, K;	*The REACH trial is still ongoing so could not be included.*

		Wingham, J; Van Lingen, R; Abraham, C; Green, C; Warren, FC; Britten, N; Greaves, CJ; Singh, S; Buckingham, S; Paul, K; Dalal, H; Clinical effectiveness and cost-effectiveness of the Rehabilitation Enablement in Chronic Heart Failure (REACH-HF) facilitated self-care rehabilitation intervention in heart failure patients and caregivers: rationale and protocol for a multicentre randomised controlled trialon behalf of the REACH-HF investigators. BMJ Open 2015;5:e009994.	
	WA	It is good to see this included.	*Noted*
Section 4			
4.1	TMc	Page 9 4.1 Disagree with the inclusion paragraph relating to generic programmes for patients with long term conditions. As it states there is no evidence for this. So why is it mentioned. We agree that co morbidities should be considered, but there is a need more specialised individual programmes for each condition.	*It is mentioned because it was a key question.*
	LS	Would the introduction of a generic programme enhance patient care when the acute/immediate recovery period varies so widely between different co morbidities.	*No evidence was found to help answer the question around generic programmes.*
	LT	Recommendation implies that comorbidities are not taken 'into consideration' in assessments in CR programmes? Please clarify/reference.	*The recommendation reinforces that they should be taken into consideration rather than implying that they are not.*
	KM	Many discussions locally about combined rehabilitation programmes including CHD, Stroke & COPD. Excited to see SIGN acknowledge this.	*Noted. No action required.*
	DM	No issues but good that generic rehab mentioned. Unfortunately not much evidence to back up.	*Noted, no action required.*
	BA	Satisfactory	*Thank you*
	GD	I didn't think wording made complete sense here.. 2nd paragraph. No studies were identified that compared the outcomes of rehab for pts with CHD enrolled in a generic rehab programme with those for CR ... Could maybe add ....compared with those enrolled in a CR programme	*Changed*

		only	
	KR	Achievement of self management of heart disease lends itself to an intensive, supportive disease specific programme with skilled MDT to support patients holistically. Further research require before recommendations can be made. Guideline can read suggestive.	*Generic programmes are not being recommended.*
	LF	Good to highlight 30% Diabetes is this 1 or 2 therefore benefit of weight management in this group as obesity in type 2 is primary cause	*This is from NACR and it does not specify type.*
	WA	It is good to see this. Should the guideline go further and recommend future research, exploring common themes for recovery/adjustment/ self-management needs and cost benefits?	*Recommendation for research added.*
4.2	TMc	The case manager does not require to be a nurse. It could be another MDT member.	*Agree. Removed.*
	LT	Limited evidence on models of individualised assessment. It depends what you mean by individual-if you mean all should be tailored, then what about the Heart Manual literature. Recommendation – use interventions 'available'. Need to consolidate the choice available in line with evidence and effectiveness as too costly and confusing to make an endless list available.	*The group noted LT's declared interest in the Heart Manual.* *The Heart Manual is not tailored to individualised assessment. The Heart Manual could be considered as a potential intervention if it is suited to an individual patient, however it is too detailed for the guideline to address every individual intervention available.*
	BA	Satisfactory	*Thank you*
	KR	'Usually a nurse' - consider this not necessary. Contact by nurse/therapist previously documented in guideline (3.2.1) reads well and describes current practice in some areas. Should depend on model of care the individual patient requires and the MDT input.	*Removed*
	LF	Excellent now dealing with comorbidities however should have skills in raising the issue of weight management with clear sign posting to available multi component programmes not specifically dietitians see SIGN 115.	*This is covered in section 5.4.1*

Section 5			
5.1	BA	Satisfactory	*Thank you*
	KR	Scottish data not available	*No action required*
	BACPR	We disagree with the sentence '*national audit focuses on physical activity outcomes*' as to our knowledge this is not the case and increasingly audit focuses on all components of CR.	*Sentence removed.*
	WA	This statement should be reflected across the guideline. Primary prevention risk stratification does not solely focus on one element, this must also be reflected in secondary prevention.	*The premise of the guideline is that individual assessment should take risk into account.*
5.2	BA	As above	*No action required*
5.3	PF	'...Patients with cardiac disease should be offered a cardiac rehabilitation programme which includes an exercise component to reduce cardiovascular mortality and improve quality of life...' Define cardiac disease (e.g. hypertension, AF, HOCM, congenital, etc etc). The evidence base in many of these areas would be nonexistent. Whereas the evidence in HF or STEMI would be good. SIGN should be an evidenced based organisation. This definition is really confused in the whole document.	*The recommendation is based on evidence incorporating various different patient groups so is extrapolating to cover all patients with cardiac disease.*
	PD	Para 5, 'exercise should be prescribed using a tailored approach...' This could be confusing. The evidence and rationale for exercise training in patients with CHD is to improve endothelial function and patient fitness which is achieved through moderate to high intensity training over at least 12 weeks at a frequency of 2 to 3 times weekly. This is different to physical activity levels which are deemed as important as part a healthy lifestyle but do not deliver the scale of benefit seem in exercise training.	*Definitions for physical activity and exercise have been added and the section restructured to be clearer about terminology. The terms reflect what was used in the studies cited.*
	TMc	Page 11 5.3 Paragraph 1 It states that regular physical activity has preventative and therapeutic effects on many long term conditions.. But this is labelled as expert opinion/ "4"	*This is based on the Stay Active report and provides background information rather than answering a key question.*

		Surely there is good high quality evidence to support this evidence? Paragraph 3 Aerobic and resistance exercises… this sentence is referenced with a critical review, but is still only graded as expert opinion. Why is this?	*It is a review of other evidence-based guidelines. As the sentence is discussing the recommendations made in the guidelines there is an element of expert opinion involved.*
	LT	2nd paragraph. Although it has been acknowledged that setting for CR is not relevant (i.e. home based as effective as community or hospital based), there is no mention of the Heart Manual which is the only home based programme backed by 3 RCTs etc. There is very little guidance here for practitioners regarding exercise: other than repeating the DoH guidelines for exercise, there is no guidance on staff /patient ratio if classes are being taken or any information about risk assessment or functional capacity testing.	*See previous response to LT on Heart Manual* *There is unlikely to be an evidence base for staff/patient ratio. It is an implementation issue for local boards.*
	KM	The inclusion of patients within a week post event will be challenging but exciting to attempt to achieve.	*Noted*
	AC	In stating 'other evidence-based guidelines', ACPICR Standards should be referenced here. Why does the recommendation state '....which includes an exercise component to reduce cardiovascular mortality and improve quality of life' but does not include 'hospital admissions' (when this is mentioned earlier in the section)? Perhaps the second paragraph, with reference to the Cochrane Review (34) should outline the groups included in that review for completeness, given that there follows a paragraph specifically on heart failure. With a recommendation on '...frequency and duration which promotes participation' there should perhaps be some expansion / explanation of this within the main text of the section, as within section 3.2.1 (IMPROVING UPTAKE) there is no mention of programme dose.	*The reference is an overarching review of other guidelines.* *Added* *The review cites trials using a variety of patient groups. It is stated that it is 'regardless of CHD'.* *There is a lack of evidence so this has been removed from the recommendation. Optimal dose and frequency has been added as a recommendation for research.*
	BA	As above.	*No action required.*
	GD	Sorry I did not understand the	

		meaning behind "There was no reduction in MI, CABG or PCI." In what way was there no reduction. Had these pts already been identified as having CAD and went on to have events despite exercise classes. Or had they already had events and despite exercise intervention went onto have further cardiac events? Maybe a little bit more information around the evidence here please? I was not familiar with the term exergames. (Despite having a WI fit!) Could we give example in here? I felt this area was busy with numbers. Less numbers more fact about outcome. Visually is off putting to people who are not over familiar with statistical analysis of research	*They were patients who had had previous CAD, as described in the preceding sentence. Reductions in MI, CABG or PCI mean further events post-intervention and are standard outcome measures. Amended to 'future MI, CABG or PCI'.* *Preference is not to include brand names.* *SIGN methodology is to support statements with statistics when available.*
	KR	Current research does not support any dose response recommendation. Further research required to reduce or increase input. Benefits to HBC of intensive, regular input documented.	*No action required*
	BACPR	Concern has been expressed regarding the emphasis on lack of evidence for dose/intensity of the exercise component. Although the systematic reviews find no effect of dose on mortality, the median frequency for the programmes in the latest review by Andersen [2016] is 3 times per week, and the median duration is 12 weeks (unpublished calculation using the study data). This means that the evidence is based on trials of CR programmes, which are longer and more frequent than is the norm in the UK. There is a danger that the emphasis on there being no recommendations for dose (frequency/duration) could be interpreted as allowing programmes to continue to provide ineffectively low doses (e.g.1x week for 4 weeks), which would be detrimental to patient care. Whilst it is accepted that individual physical activity prescription will vary from person to person, there is reasonable consensus that the totality of evidence supports the benefits of improving physical activity	*The Cochrane Review is clear that there is no specific dose or frequency. SIGN cannot cite unpublished data.* *It is stated that there should be daily physical activity.* *Optimal dose and frequency has been added as a recommendation for research.*

		levels (and therefore, exercise capacity) and that this is predicated upon 2-3 sessions of "exercise" (either supervised or home/remote) for at least 8 weeks duration, ideally 12. The initial assessment and final assessments are additional components. The exact definition of an exercise session could be made clear eg, 20-30 mins of activity based upon the prescription following the initial assessment of exercise capacity. Given that half the patients with CHF have HFpEF we should be offering CR to these patients as recommended by the 2010 NICE guidance. There is emerging evidence that exercise based interventions can benefit patients with HFpEF: Pandey A, Parashar A, Kumbhani DJ, et al. Exercise training in patients with heart failure and preserved ejection fraction: meta-analysis of randomized control trials. Circ Heart Fail 2015;8:33-40. Exercise training in heart failure patients with preserved ejection fraction: a systematic review and meta-analysis. Chan et al, Monaldi Archives for Chest Disease Cardiac Series 2016; 86:759 doi: 10.4081/monaldi.2016.759 Heart Failure with Preserved Ejection Fraction Margaret M. Redfield, N Engl J Med 2016; 375:1868-1877.	*Pandey and Chan added* *This is a case study therefore doesn't meet quality criteria.*
5.3.1	LS	From the grading of the studies is there not enough evidence to say that technology based exercise	*Comment incomplete on feedback form.*
	LT	Why are some studies in this section mentioned by name (AYH, COACH, and CHOICE etc) and others purely by reference? They actually all have quite poor attrition rates including the CBT based Beating Heart Programme. Please revert all to reference only otherwise it puts a subjective bias in favour of the ones named. The COACH reference provided is not about exercise, it's about lipid lowering, but this section is on 'technology based exercise'. Please	*Names removed* *The study had an exercise component to it, with a secondary outcome of activity levels. Lipid lowering reported as it was the primary outcome.*

		clarify.	
	BA	More evidence required.	*More evidence would be desirable but it was felt that there was sufficient evidence to support a recommendation that these interventions **may** be worth considering if patients wished to do so.*
	BACPR	'Technology-based interventions may be considered for patients participating in cardiac rehabilitation' - one has to be careful about recommending these as there are few if any long-term studies looking at hard outcomes such as cardiovascular morbidity/ mortality/ hospital readmissions. See Heart 2016 editorial: Dalal, HM; Taylor, RS. Telehealth technologies could improve suboptimal rates of participation in cardiac rehabilitation. Heart 2016;doi:10.1136/heartjnl-2016-309429. It is not clear why this (Devi R, Powell J, Singh S., 2014) particular intervention was highlighted and others not – given the high rate of those declining to take part (78.6%) and the study authors own conclusions state: "*A larger pragmatic trial is needed to provide definitive evidence of effectiveness and cost effectiveness*".	*The wording of the recommendation is weak to reflect the strength of the evidence, but the interventions **may** be worth considering if patients wish to do so.* *All had a high dropout rate which is reflected in the working of the recommendation – 'may be considered'.*
5.4	LS	With so few cardiac rehab dieticians should there be a recommendation that all CR staff can give dietetic advise	*There is no evidence to support a recommendation on who should deliver advice.*
	VT	The first paragraph could be enhanced by being clearer about the key risk factors which can be influenced by diet. The explanation on moving away from single food and nutrient recommendations to a whole diet approach for optimum benefit is welcome and consistent with other guidance in this area. However, given that the evidence is rated as 1++ for the Mediterranean diet pattern I am curious as to why a recommendation hasn't been developed for this as an approach to dietary advice. It would be useful to provide a reference for the description of the	*The group did not feel this was necessary.* *No action required.* *This was not a key question and is included to provide background information. Further advice will be available in the revised primary prevention guideline which is cross-referenced here. This section is about how to implement that advice.*

		dietary pattern given in the second paragraph of 5.4. Is the reference to 'preservatives' meaning processed meats or salt/sugar? Rewording might help to avoid misinterpretation of this term. Linking to the eatwell plate is welcome to ensure consistency of messaging and helps with the practical interpretation of a Mediterranean style diet for foods eaten in Scotland.	*Reworded* *No action required*
	BA	Satisfactory	*Thank you*
	LF	It is known that obesity increases the risk of CVD through causing High blood pressure and Diabetes. 36% of Hypertension 18%of MI, 15% of angina pectoris and 6% strokes attritutable to obesity. (McGuire et al Estimating the cost of obesity in England in the national audit office tackling obesity in England). We know that weight loss improves type 2 DM and with greater weight loss, remission can occur. It seems a lost opportunity to address weight loss and I would suggest identifying overweight and obese individuals and raising the issue of weight management and signposting to locally provided services as well as commercial.	*Reference to the Obesity guideline (SIGN 115) added.*
5.4.1	BA	Satisfactory	*Thank you*
	LF	For the weight management aspect of this question it is not who but what is the content of your intervention. See SIGN 115 Key recommendations 2.4, Multicomponent interventions are more successful than dietary advice alone ,	*Reference to the Obesity guideline (SIGN 115) added to section 5.4*
5.4.2	LS	It is unnecessary to say they are COMMERCIAL - surely there success is due to the expertise and not because they are run for profit	*Commercial removed*
	BA	More evidence required	*While there is no evidence specifically for the cardiac population it was felt that it was still helpful to extrapolate from trials in the general population.*
	LF	It is difficult to find weight management programmes showing 12 month outcomes and specifically for patients within the CR group however it should be acknowledged	*Given the paucity of evidence it was felt that trials on the general population could be used as a guide. Uptake of programmes are dependent on personal choice and availability.*

		that the population group that attend commercial programmes may be very difficult than CR group in age, weight, gender, and comorbidity particularly diabetes prevalence and that has not been highlighted. I would therefore be very hesitant in recommeding only commercial and would recommend multicomponent NHS and commercial programmes.	
5.5	DM	There has not been any discussion around site of rehab service. Hospital-based and community based rehab both exist in Scotland. Is there evidence that referral from hospital based rehab to community/sports centre rehab is helpful over the long term?	*This was not included as a key question as there is unlikely to be any evidence.*
	BA	Good.	*Thank you*
	PD	'No evidence was identified comparing the efficacy of home-based and centre-based CR on long-term adherence to exercise (≥ 6 months).[61,] Buckingham SA, Taylor RS, Jolly K, et al. Home-based versus centrebased cardiac rehabilitation: abridged Cochrane systematic review and meta-analysis. Open Heart 2016;3:e000463. doi:10.1136/openhrt-2016-000463	*This sentence has been removed.* *The guideline did not address the question of home-based versus centre-based CR.*
	WA	Should the final statement be included if it is not related to the larger CR population? Why did the patients not engage? Does this last paragraph draw a negative conclusion from limited evidence? From the experience of CHSS within the affiliated groups peer support is a primary factor for engagement and sustained change. A quick search on Knowledge Network also highlighted the importance of peer support. http://www.knowledge.scot.nhs.uk/home/library/articles/articles-results.aspx?q=publicid:%22OVIDemed7|71955990%22&pm=fql&expand=true&portal= http://www.knowledge.scot.nhs.uk/home/library/articles/articles-results.aspx?q=publicid:%22OVIDpsyc|2013-99240-332%22&pm=fql&expand=true&portal=	*Paragraph removed.*

		http://www.knowledge.scot.nhs.uk/home/library/articles/articles-results.aspx?q=publicid:%22OVIDemed7|603160621%22&pm=fql&expand=true&portal=http://www.knowledge.scot.nhs.uk/home/library/articles/articles-results.aspx?q=publicid:%22OVIDemed7|71955902%22&pm=fql&expand=true&portal=http://www.tandfonline.com.proxy.knowledgeservices.org/doi/abs/10.1080/13548506.2015.1115107 https://www-clinicalkey-com.proxy.knowledgeservices.org/#!/content/playContent/1-s2.0-S0828282X09705318	
Section 6			
6.1	MH	May need to highlight that due to more patients presenting with Cognitive impairment issues this is putting extra demands on the delivery of CR services locally.	*It is highlighted as a problem but demand on services is outwith the remit of the guideline.*
	BA	Satisfactory	*Thank you*
	GD	spell check : atheroscerosis add L	*Amended*
	WA	No mention of cardiac disorders in relation to social wellbeing is discussed in this chapter. - http://userpage.fu-berlin.de/~health/support/schwarze_rieckmann_in_weidner.pdf - https://www.cardiosmart.org/News-and-Events/2014/10/Social-Support-Boosts-Recovery-after-Heart-Attack - Social support and cardiac recovery, Moser D K, 1994, Journal of Cardiovascular Nursing. No recommendations are made in relation to social support. Issues such as recreation/ hobbies and sex are not addressed	*This is outside the remit of the guideline.*
6.2	MH	Informative.	*Thank you*
	LT	Recommendation – please define 'psychologically trained and supervised'. Is such a level of training for regulated health professionals necessary in level one, even level 2 of the stepped care model? If it is, then we should be looking to our Universities/undergraduate courses and embedding such in the curriculum not delivering it after	*The group consider that this term is self-explanatory and adequate.* *Level 1 is already expected of undergraduates. Further training when in post is an implementation issue.* *It is based on guidance from NICE and NHS Education Scotland.*

		qualification/registration. This recommendation is weighted on expert opinion and as such needs further research before being recommended in a guideline. Surely if there was a current evidenced psychologically based patient intervention that included clinician training/support and a comprehensive patient assessment that would suffice, (and could be built on) otherwise said training/supervision becomes extremely labour -cost intensive in an already recruitment strapped NHS? Unless its mandatory or paid for staff will not attend.	*NES offer approved courses that are free and readily accessible.*
	KM	The long term belief that more psychologists are required in C/R has been replaced by upskilling the HCP working in C/R with psychological skills to facilitate goal setting, problem solving and self monitoring. The stepped care model is an example of effective psychological support.	*General comment so no action required.*
	BA	As above.	*No action required.*
	WA	This content reflects Clinical psychology with limited reference to normal psychological adjustment as part of a health related change. Could there be some information around Health Psychology to assist clinicians to understand what may be normal adjustment and adaptation?	*This is outside the remit of the guideline.*
6.3	JS	There are several versions of some of the psychometrics available. The full and correct names of the assessments validated for use within a CHD population should be provided here (PHQ-9, GAD-7, BDI-II(?)). Referring to these tools as 'screening' tests may be unhelpful as it perhaps indicates a one-off assessment. Alternative terminology might help convey the notion of and need for continual monitoring and assessment.	*Amended* *Changed*
	KM	Remains essential to measure whichever tool is employed.	*Agree*
	BA	Accurate.	*Thank you*
6.4	KM	It is so encouraging to have the need for more psychology therapies and interventions recognised so much within the new guideline.	*General comment so no action required.*

	BA	Satisfactory	*Thank you*
6.4.1	BA	Agree	*No action required.*
	GD	Guided therapy in HF symptom management. Another new term for myself that may benefit from some examples for people reading this guideline.	*Guided imagery is a well accepted term. The group do not feel further explanation would help the flow of the text.*
	WA	Within the context of cardiology what type of pain or symptoms are being highlighted within this recommendation? Is this achievable within clinical practice? Can alternatives be recommended?	*Recommendation has been changed.* *This is an implementation issue.*
6.4.2	KM	Delighted there is still recognition of the need for supervised relaxation within any programme. Although nine hours would be challenging to achieve!	*The recommendation and supporting evidence statement have been amended.*
	PD	This meta-analysis uses predominately very old studies (1970s, 80s and early 90s) where CR usual care was very different to what is delivered in the modern era where statins and acute coronary interventions became routine practice (after 1995). It is argued that the effect of CR related interventions is inflated in the old era. More recent trials exist: James A. Blumenthal, Enhancing Cardiac Rehabilitation With Stress Management Training: A Randomized Clinical Efficacy Trial http://dx.doi.org/10.1161/CIRCULATIONAHA.115.018926 Circulation. 2016;CIRCULATIONAHA.115.018926 Originally published March 21, 2016	*The recommendation and supporting evidence statement have been amended.*
	AC	It seems incongruous to not provide any specific guidelines on exercise dose, yet specifically recommend a mean relaxation time of nine hours.	*This recommendation and the supporting evidence statement have been amended.*
	BA	Agree	*No action required.*
	GD	The use of guided imagery again compared to attention control or usual care. I did not understand what attention control was until I looked up (Which maybe is expected) but the guideline is for lay people also and I would suggest a bit more explanation of some of these terms for that reason.	*The guideline is primarily for healthcare professionals. A separate patient version will be produced.*

	BACPR	We were surprised to read such a specific recommendation as a '*mean time of 9 hours*' based on just one study. We feel that this recommendation would be better placed as ensuring that relaxation was a component of menu-based CR.	*See comments above.*
	WA	Is this recommendation achievable in clinical practice? Are there any alternative recommendations?	*See comments above.*
6.4.3	LT	It is true that further research needs to be carried out in the cardiac population; however, given the alignment with LTC, we are surprised that no evidence on the efficacy of Mindfulness in such groups was included? Reference: Bohlmeijer E, Prenger R, Taal E, Cuijpers P. The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. Journal of Psychosomatic Research 2010; 68(6):539-544	*This study demonstrated a small effect size from eight moderate-to-low quality RCTs. Only one small RCT on men with cardiac disease was included. It is not of sufficient quality to support a recommendation.*
	BA	More evidence is needed	*No action required.*
	GD	Should this be in the guideline if not enough research to even make a recommendation on?	*It is something that patients ask about so was included as a key question.*
Section 7			
7.1	RT	Increasingly important area and good to see inclusion.	*No action required.*
	KM	The increase in strength, stamina and confidence patients gain from attending a C/R programme is surely essential to improve return to work rates. It is disappointing a study reported delay in return to work.	*General comment, no action required.*
	DM	Good section. No issues.	*Thank you*
	BA	Agree	*No action required.*
	WA	It is good to see this mentioned. Please can you consider adding the issues of financial concerns and driving? Are there any sources of this type of information that can be sign posted at the end of the guideline?	*This is outside the guideline's remit. We have provided contact details for BHF and CHSS who provide advice on issues such as financial concerns.*
7.2	SJ	There is no doubt that getting back to work increases health and clear personalised advice can be gained through existing occupational health support either via the employer or using services such as Working	*Added to sources of further info.*

		Health Services Scotland.	
	BA	Agree	*No action required.*
Section 8			
8.1	ML	Consider highlighting that guidelines exist on the most appropriate medication for ACS treatment in SIGN 148. Appropriate prescribing should be in line with clinical guidelines.	*References to other SIGN CHD guidelines added.*
	AM	I wonder if there's benefit in directing the reader to SIGN 97???	*Reference added.*
	BA	Agree	*No action required*
	GD	Change word "disbenefit" could be disadvantages or beliefs about the potential harm of drugs.....	*Changed to disadvantages*
	WA	Spelling error – disbenefit?	*Changed*
8.2	SJ	To get CR nurses trained to prescribe is a massive undertaking with no evidence it will improve any outcomes or be any more effective for the patient. The GP will be aware of all the prescribing issues of each individual patient and is best placed by a long-way to adjust medication. The logistics of how medications are prescribed on repeat in Scotland do not lend themselves to a non-medical prescriber becoming involved. All we need is a request from the CR discharge to review/titrate medications and we can do so effectively with all the subsequent reviewing of blood results etc safely in a well-established manner. Don't go reinventing the wheel.	*This was included as a key question because it is recommended in BACPR and Scottish Government policy.*
	LS	Non medical prescribing would gain little in an area that has provision of pharmacist led PMI clinics and LVSD clinics	*See response to SJ*
	KM	Non-medical prescribing is a new development to be considered to help achieve compliance with initiation and up titration of secondary prevention medications.	*See response to SJ*
	DM	Is there a missed opportunity to emphasise the role of non-medical prescribing in up-titration of prescribed secondary prevention drugs?	*The section covers up-titration.*
	BA	Agree with this section but don't agree that CR programmes are the place for non medical prescribing, GP 's role and enough guidance available as to what pts should be prescribed	*See response to SJ*

	KR	Evidence for the benefits of nurse and AHP prescribing in other long term condition. Profession of non-medical prescriber should depend on individual patients care / MDT input.	*Recommendation states it may be considered.*
	BACPR	We were disappointed that non-medial prescribing did not emerge as a full recommendation – there is a strong and growing evidence base for this to be an integral part of CR programmes.	*The recommendation reflects the evidence base.*
8.3	SJ	This is a massive, massive part to preventing subsequent cardiac death - disappointing it gets almost as much ink in the guideline as mindfulness... I'd like to see a focus on this part of cardiac rehab. There are 5 interventions which will improve mortality the most: exercise, smoking and medications (statins, aspirin, and beta blockers). Others help as well - but not as much (BP control, weight management). We should focus cardiac rehab on how to improve this triad and be wary of drifting where the sparse amount of evidence lies.	*It was disappointing not to find sufficient evidence to give this more prominence.*
	KM	Explanation and education about secondary prevention medications to increase compliance is an essential component of any C/R programme	*Agree, but no evidence to support such a statement.*
	BA	Agree	*No action required*
	BACPR	Involving primary and secondary care through CR may help with this: Dalal HM, Evans PH. Achieving national service framework standards for cardiac rehabilitation and secondary prevention. BMJ 2003;326:481–4 Dalal HM, Wingham J, Lewin R, Doherty P, Taylor RS. Involving primary care and cardiac rehabilitation in a reorganised service could improve outcomes. Heart 2011;97(14):1191.	*Thank you for the suggestion. The references are an audit and a letter and therefore do not meet the quality criteria for inclusion.*
Section 9			
General	LT	'guiding the production of locally produced information? Does this mean this guideline is recommending clinicians use their time to locally produce, cross reference to evidence, update, and print out etc information? Has the cost of the governance of all this been weighed up in comparison to existing	*This section is intended as a prompt for healthcare professionals on what patients may like to discuss with them. Sometimes clinics like to produce their own information leaflets with local contacts included – this information may help to inform that leaflet.*

		evidenced tools e.g. The Heart Manual –evidenced in line with clinical guidelines annually? Or does it mean that charity information leaflets are given out to cover all the topics listed? As there will be overlap in the content of these leaflets and they have never been evidenced to see how effective they are outcome wise, how do we know that they are effective-and are we just using them because they are free to services? If going to be giving out leaflets then will also need some charts/pages for goal-setting, diary and file to keep them in etc?	*Resources that are referenced in this guideline have been sourced from reputable organisations which use evidence-based information to support and inform both healthcare practitioners and patients alike. They are consistent with the sources signposted by NHS24. There are stringent governance/quality control mechanisms in place to ensure the materials produced by organisations are updated on a regular basis and meet the needs of the audience they are aimed to support.* *There will also be a patient version of the guideline produced which translates into lay terminology the evidence base and recommendations of most interest to patients and carers.*
	KM	Essential	*Noted*
	BA	Excellent	*Thank you*
9.1	PF	Should secondary prevention medication (especially the importance of DAPT in the early phase) not form part of each phase? Please review the use of 'concordance' rather than 'adherence', which is used everywhere else in the document. Stay consistent or it will confuse the reader.	*The section has been restructured to emphasize the points throughout the patient journey.* *Text amended to concordance when discussing medication and adherence for other therapies.*
	TMc	Page 22 Provision of information Prior to hospital discharge: Patients should also be given advice on a gentle walking plan prior to discharge at Phase 1 At Cardiac Rehab Assessment - Should Risk Factors, medications, GTN protocol, symptoms, side effects also be considered at the initial assesment ?	*This is part of appropriate daily activities.* *This is covered under 'diagnosis/advice on specific conditions.*
	LT	Box 2 in the table needs clarification as really unclear as to where or whom the initial information as listed is coming or derived from, as the 'further information' is coming from charity leaflets? Please clarify all of this. Also no goal-setting mentioned in box 3.	*These are a list of prompts for healthcare professionals to discuss with patients. They can use whatever 'further information' they think is appropriate. It is stated that the list is neither exhaustive nor exclusive.*
	ML	Section 8.3 highlights the importance of medication adherence and the positive impact that ongoing support, education and counselling can make. Consequently, the checklist in section	*List reorganised.*

		9.1 states: 'Advise on the purpose and use of secondary prevention medication and encourage concordance.' throughout cardiac rehabilitation. We propose this activity is additionally highlighted at milestones such as 'Prior to hospital discharge following a cardiac event' and 'At cardiac rehabilitation assessment'. Greater prominence for medication counselling at these two time points has the potential to improve patient understanding and safety. It will also help to ensure that the benefits of these medicines to patients are optimised.	
	KM	Very impressed with the checklist for information as an aide memoir.	*Thank you*
	DM	Again focus on ischemic heart disease	*It is generic. Specifics can be discussed under diagnosis.*
	BA	Excellent	*Thank you*
	GD	I would suggest that smoking cessation is put into prior to hospital discharge following cardiac event as well as rehab assessment box. Brief intervention should occur in hospital as to give a patient choice about going out of hospital with NRT which they often want to do given a choice if they have already made up mind wish to stop.	*Added*
	WA	The layout could be improved	*Layout should look better after desktop publishing.*
9.2	LT	Providing so many websites is debatable as many change or cease to exist during the guideline time. One would have to also question the necessity of all these overlapping/overarching groups/charities, their remits and the cost of public money to maintain them. Narrow them down and provide an overarching one that has the overall responsibility for co-ordinating CR nationally.	*NHS Inform is included and this link provides an online directory of relevant resources and organisations.* *Outside the remit of SIGN.*
	VT	As this is primarily for signposting patients, please remove the email address:bhfhi@bhf.org.uk and replace with hearthelpline@bhf.org.uk	*Changed*
	AC	www.aliss.org ALISS (A Local Information System for Scotland) is a search and	*Added*

		collaboration tool for Health and Wellbeing resources in Scotland. It helps signpost people to useful community support, and with an ALISS account you can contribute the many and varied resources that our local communities have to offer.	
	BA	Comprehensive	*Thank you*
	GD	E-Heart in here?	*Added*
	BACPR	Please add: **British Association of Cardiovascular Prevention & Rehabilitation** [BACPR] 9 Fitzroy Square, London, W1T 5HW Tel: 020 7380 1919 www.bacpr.com Email: admin@bcs.com National membership organisation providing support to health professionals, promoting excellence in cardiovascular prevention and rehabilitation through quality education, training and a Certification Programme (joint with National Audit of CR). Suggested addition: **Health Talk Online** Healthtalkonline: http://www.healthtalk.org/peoples-experiences/heart-disease/heart-attack/cardiac-rehabilitation-support (open access). Video clips and text of patients with heart disease talking about their experiences of CR.	*Added*
	WA	Sources for; vocational information, Carer organisation, Benefits advice, DVLA	*Preference is to signpost to CHSS and BHF to provide further information.*
Section 10			
General	BA	Agree	*No action required*
10.1	PG	All SIGN documents, of every meeting, should be open to the public. To ensure complete transparency.	*SIGN documents pertaining to the development of the guideline are available on request.*
	BA	Accurate	*No action required*
	WA	There are several recommendations which I foresee being a major issue in relation to implementation into practice. This is not to say that they are not worthwhile, but in the current financial climate where staffing levels within areas are already challenged, they may be viewed as unrealistic.	*Implementation may be challenging but the guideline is intended to drive improvement.*

10.2	LT	Is such a level of training for regulated health professionals necessary in level one, even level 2 of the stepped care model? If it is, then we should be looking to our Universities/undergraduate courses and embedding such in the curriculum not delivering it after qualification/registration. Surely if there was a current evidenced psychologically based patient intervention that included clinician training/support and a comprehensive patient assessment that would suffice, (and could be built on) otherwise said training/supervision becomes extremely labour -cost intensive in an already recruitment strapped NHS? Unless its mandatory or paid for staff will not attend.	*See previous response to LT in sect 6.2*
	BA	Not sure that exercise professionals (NHS) will require extra training- most centres use physios and they are trained to deliver this.	*Disagree, some may need training.*
	JK	Will there be further detail regarding 'accredited training' referenced 'for those who deliver exercise training for patients with multimorbidity'. (p.26)	*NES are developing training.*
10.3	PF	'.....Number of patients...' Why would number be appropriate, surely % is better? '....offered smoking cessation interventions (where appropriate)..' is this not better split into screening and then intervention in those than smoke? Why is exercise not included here?	*Changed* *Changed* *Added*
	PD	Audit of guideline recommendations requires... suggest add: transparency and a willingness to share data	*Agree but do not think this needs to be added to the guideline.*
	PD	'Number of patient who: perhaps consider including number of patients that are eligible for your service	*Added*
	TMc	Page 26 10.3 Implementing the Guideline Key points are mentioned ie dietary, smoking cessation but it does not mention exercise at all	*Added*
	LT	We are forgetting other psychological issues here-other than anxiety and depression. Misconceptions, illness/health beliefs, engagement etc are all precursors	*This is an audit of implementation of recommendations.* *This is outside the remit.*

		that should be audited not only the above, otherwise patients will believe that they should have anxiety or depression.	
	KM	As a member of the Cardiac Rehab Interest Group Scotland we have been keen to advance the National Audit of C/R.	*No action required*
	DM	A national rehab database would be helpful.	*Agree*
	BA	Good section	*Thank you*
Section 11			
11.1	PG	Generally too narrow. Medical Humanities almost never feature. Ethics lack.	*Patient views, values and preferences are taken into account throughout the guideline development process. The group composition reflects that this is an evidence-based clinical guideline and has to be kept to a pragmatic size.*
	PD	This date range does not take account meta-analysis date ranges which go back to the 1970s. See previous comments in section 6.4.2	*The meta-analysis cited was published in 2005.*
	LT	It would have been good to see the key words that were searched and as an appendix the list of publications that were accessed. It is also good to note that some main searches were supplemented by members on the development group, which could increase the risk of bias? Other publications that could have been within that range are: References 1.Heron N, Kee F, Donnelly M, Cardwell C, Tully MA, Cupples ME. Behaviour change techniques in home-based cardiac rehabilitation: a systematic review. Br J Gen Pract. 2016 Oct 1;66(651):e747-57 2.Taylor Rod S, Dalal H, Jolly K, Zawada A, Dean Sarah G, Cowie A, et al. Home-based versus centre-based cardiac rehabilitation. Cochrane Database Syst Rev 2015(8). 3.Blair J, Corrigall H, Angus NJ, Thompson DR, Leslie S. Home versus hospital-based cardiac rehabilitation: A systematic review. Rural and Remote Health 2011;11: 1532.	*The search narrative will be published as a separate document alongside the guideline.* *Every paper included in the evidence review is critically appraised by two independent reviewers and only accepted for the guideline if it is of acceptable methodological quality.* *Heron has now been added.* *Not a key question* *This is a general review therefore does not meet quality criteria*

		4. Dalal H, Doherty P, Taylor R. Cardiac rehabilitation. BMJ 2015; 351:h5000. Full text available at http://www.bmj.com/content/351/bmj.h5000.full?ijkey=lc3zT7QrRx77zOS&keytype=ref 5. Dalal HM, Evans PH, Campbell JL, Taylor RS, Watt A, Read KLQ et al. Home-based versus hospital-based rehabilitation after myocardial infarction: A randomized trial with preference arms - Cornwall Heart Attack Rehabilitation Management study (CHARMS). Int J Cardiol 2007;19:202-211. 6. Jolly K, Lip GYH, Taylor RS, Rafferty J, Mant J, Lane D. The Birmingham rehabilitation uptake maximisation study (BRUM): a randomised controlled trial comparing home-based with centre-based cardiac rehabilitation. Heart 2009;95:36-42.	*Not a key question* *Not a key question*
	RT	Well done - a comprehensive literature review that seems to pick up in all the key literature. Good to see inclusion of qualitative (as well as quantitative) research. The qualitative research could be made explicit in the evidence tables - unless I missed it.	*Thank you. Qualitative literature was used to identify patient issues, which informed the key question setting.*
	BA	Agree	*No action required*
11.1.1	RT	As above.	*See above*
	BA	Agree	*No action required*
	WA	This remains a highly clinical guideline. The issue of social recovery is not addressed.	*The remit was clinical.*
11.1.2	RT	As above.	*See above*
11.2	SJ	Ultimately we must review improvement in mortality for participants in any new model. That is surely the goal of CR...??	*See previous response under General comments.*
	LT	None of the research topics listed are on the acute aspect of CHD and as that has the basis for all that follows in CR/LTC management, a study into the impact of information provided (verbally and or/ leaflets) to patients must be done. The guidelines are very keen on training up nurses/physios post acute in BC/CBT techniques, however it would be good to include our acute	*Outside remit* *Outside remit*

		cardiac specialists/medics in such not just with 'after the event' colleagues. Without that this training will not reach the impact intended.	
	RT	Recommendations appear sound. I would suggest the inclusion of research question highlighted in NICE's ongoing update of Clinical Guidelines for HF (CG 108) i.e. the relative efficacy and cost-effectiveness of centre vs home/community based CR interventions for heart failure. I would also call for further research on the impact of involving carers/family in CR and the need to further evidence on the impact of CR on work/vocational status.	*There was no key question on centre vs home-based care.* *Added*
	BA	Agree	*No action required*
	GD	Spelling error behaviours.	*Amended*
	WA	The recommendation - 'the impact of partners or carers' involvement in CR for both patient and carers' outcomes' should be broadened out to capture wider social networks The influence of peer support in cardiac disorders also requires greater understanding.	*Outside remit* *Added to recommendations for research.*
Section 12			
12.3.2	WA	My job title has changed from Cardiac & User Development Manager to Head of Supportive Services Ms Nicola Cotter no longer works for CHSS	*Changed* *Noted, thank you.*
Annexes			
Annex 1	SJ	For the very first question I did not see any part of the guideline answering this direct question. It was all surrogate markers for outcomes - ultimately we need to reduce morbidity and mortality from CR and I didn't see a direct statement right at the start of the guideline (where it should be) that it does.	*See previous response under general comments.*
	LT	While the level of attention that went into the production of this guideline is commendable, it is a rather confusing document for staff especially generalists, particularly if you want referrals from practice nurses/GPS. One has to query how supportive this guideline (as it stands) would be and	

		how the abbreviated format as a quick reference guide would look. While the challenge of implementing a new model of CR has been acknowledged, and the importance of further research has been highlighted, this is a national guideline and must be based on the best available up to date research evidence, not weighted on expert opinions or forecasts of the new model – which may be the case here? These new models need researched in order to be considered as recommendation in future guidelines. Whilst most supporters of the discipline would agree that CHD needs to be self-managed as a LTC we are also in danger of moving/demeaning the acute cardiac event or diagnosis into a LTC on day 1, and omitting what is highly evidenced as the specialist rehabilitation aspect of that.	*The guideline is based on the most recent evidence.*
	BA	Agree	*No action required*
	WA	From the perspective of an inclusive service, the CR guideline must move away from stating CHD and broaden out to the wider cardiac population who could benefit greatly from a programme of recovery, coping and self-management.	*The introduction has been amended to give this further emphasis.*
Annex 2	LT	We can appreciate the steer away from exercise, however the robust evidence of such must be included, and from a global perspective it would be (politically) unwise to ignore it? It would seem this guideline has now swung the barometer over to the aspects of clinical psychology when it should be comprehensive, not necessarily led by one or other. It is also disappointing that there is no recommendation of when CR should start. The evidence for home based (the main one is the Heart Manual) is very robust (even in behaviour change publications) and should be included, particularly when the need to adopt a 'person centred approach' in a 'range of settings' is alluded to in the guideline?	*Disagree. The guideline is balanced and includes the core components. Exercise has been addressed.* *Unlikely to be evidence – a statement has been added to the introduction regarding timing.* *See previous responses re the Heart Manual.*
	BA	Self explanatory	*No action required.*

Annex 3	LT	Self management' is mentioned 14 times in the guideline, not including references. Please define and reference what you mean by this concept within the context of this document. Following on from the above, why have home-based programmes been omitted (apart from those with solely technological applications and poor attrition rates?) The evidence for home based is very robust (even in behaviour change publications) and should be included, particularly when the need to adopt a 'person centred approach' in a 'range of settings' is alluded to in the guideline? Issues such as accessibility, rural areas, dislike of groups, commitment as a carer etc are as such being discriminated against, never mind the cost effectiveness	*The guideline group think the term is self evident and does not need further definition.* *See previous comments. The setting is a matter of choice for what suits individual patients best.*
	BA	Can be difficult to understand	*The guideline group think it is clear and it is a widely used resource.*