

## Annex 2

# Evidence summaries for shortlisted interventions

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This report was produced by the Institute of Health & Society, Newcastle University on behalf of the Realising the Value consortium. It forms one of the annexes to the report *At the heart of health. Realising the value of people and communities.*

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### **About this report**

This report was produced by J Hislop, J Stoniute and L Vale of the Institute of Health & Society, Newcastle University on behalf of the Realising the Value consortium. It forms one of the annexes to the report 'At the heart of health - Realising the value of people and communities' which can be found on the programme website [www.realisingthevalue.org.uk](http://www.realisingthevalue.org.uk).

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## Executive Summary

Summaries of the evidence were conducted for selected approaches identified from a wider scoping review (Annex 1). These summaries were drawn from systematic review evidence that had defined them as 'promising' based on effect sizes of difference between intervention and control groups, and UK comparative studies for each approach.

In terms of effectiveness, peer support was reported to enable significant improvements in patient functioning (e.g. reduced distress, activity limitations) [2], quality of life [1, 2, 3, 5, 7], confidence/self-efficacy [2, 4, 5], self-care [4, 5] and activation [1, 2, 4]. Also, two studies showed significant improvements in healthy behaviours [2, 4]. In mental health, outcomes such as empowerment, recovery and hopefulness were significant [1, 5] and in diabetes, not only health-related but also behavioural (e.g. physical activity [2]) and biomedical outcomes such as HbA1c, weight loss and cholesterol [2, 3] were improved significantly. However, for resource use outcomes, regardless of speciality, the evidence was mixed [1, 5, 7]. One review [6] reported how peer support was used to help children whose parents have mental illness. Two studies reported significant reductions in depressive symptoms and one study reported a significant increase in knowledge of mental illness.

The potential benefits of self-management approaches were also shown to be wide ranging. Within the context of wellbeing outcomes, across various specialties consistent improvements were found in disease-related knowledge [14, 15, 20, 24, 29,], self-efficacy [12, 16, 17] and physical functioning [16, 24, 26, 28,]. In addition, improvements were seen in psychosocial outcomes (e.g. relationships, communication) [14, 16], coping [20, 22, 24] and relief [20, 27]. For biomedical outcomes, blood pressure [14, 26] and cholesterol [16, 26] improvements were seen, as were behavioural outcomes but these were often poorly-specified (e.g. summarised across various behaviours being targeted depending on intervention context). What is clear, in terms of resource use, is that self-management interventions have the potential to reduce health-service utilisation [12, 26, 29], including emergency visits [12-14, 23].

Specialty-specific benefits include improvements in other biomedical outcomes (e.g. HbA1c for diabetes interventions [14]) or wider social impacts (e.g. school absence as a result of paediatric asthma self-management [12]), as well as specialty-specific functional outcomes (e.g. depression following mental health interventions [18] or seizures following epilepsy interventions [23, 24]).

Evidence specifically from the UK confirms the effect of self-management education interventions, particularly with regard to knowledge, self-efficacy, and healthcare utilisation (at least in acute care settings).

For health coaching, interventions show some promise in terms of behaviour change in terms of diet, exercise and adherence to medication. However, the evidence was less clear on cost.

Group activity and asset-based approaches are emerging areas of practice and so none of the evidence included in our review of person- and community-centred

approaches for health and wellbeing could be categorised as including either of these approaches. There is therefore not yet any evidence to summarise for these approaches.

More generally, the evidence is stronger in some areas than others, and to some degree results are dependent on what has been reported in both the original studies and the reviews summarising them; for many outcomes there is an absence of available evidence and so while it cannot yet be conclusively refuted that outcomes are “promising”, nor can it be confirmed.

Quality assessment processes were reported by most of the included reviews, but studies were in most cases, judged either negatively against the quality assessment criteria (specific to each review) or was too unclear from the reporting of the original studies for the review authors to draw conclusions about the robustness of their included evidence base.

## Introduction

As part of the Realising the Value programme, we conducted a scoping review of all person- and community-centred approaches for health and wellbeing. The purpose of the scoping review was to inform the selection of a final shortlist of five ‘promising’ interventions. More details about the scoping review process and our arrival at the achieved shortlist are available separately in Annex 1, published alongside this report.

Following on from completion of this process, the Realising the Value consortium also wished to further summarise details of the effectiveness, where possible of each of the interventions that had been shortlisted (peer support, self-management education, group activities, asset-based approaches and health coaching) using the evidence identified from the initial scoping review. The purpose of this document is to summarise the effectiveness of each of the interventions, where it has been possible to do so, using the sources identified from our original scoping review.

## Methods

### *The original scoping review*

The sources used to describe the effectiveness for the five interventions consisted mainly of systematic reviews of the comparative evidence base for one or more person- and community-centred approaches for health and wellbeing. It should be noted that, as the academic literature typically refers to analysis of comparative courses of action (in evaluation terms normally defined as the ‘interventions’), the terminology used in this report therefore often differs from

the main programme report, which describes a number of person and community-centred 'approaches'. To inform the shortlisting, during the scoping review outcomes had been categorised as showing "small", "medium" or "large" effects (see our methodological report in Annex 1 for more details). Interventions showing at least one "medium" or "large" outcome effect were defined as 'promising', and used to help inform the decision-making process; this decision-making process determined a final shortlist of the most promising interventions. Reviews with "small" positive effects were not deemed sufficient to inform the shortlisting process, but a record was kept of these studies.

Additional comparative UK studies that had looked at person- and community-centred approaches for health and wellbeing had also been collected during the initial scoping review process, but this was primarily to help inform proposed modelling work at a later point in the programme (i.e. assess the applicability of parameter data to a UK setting).

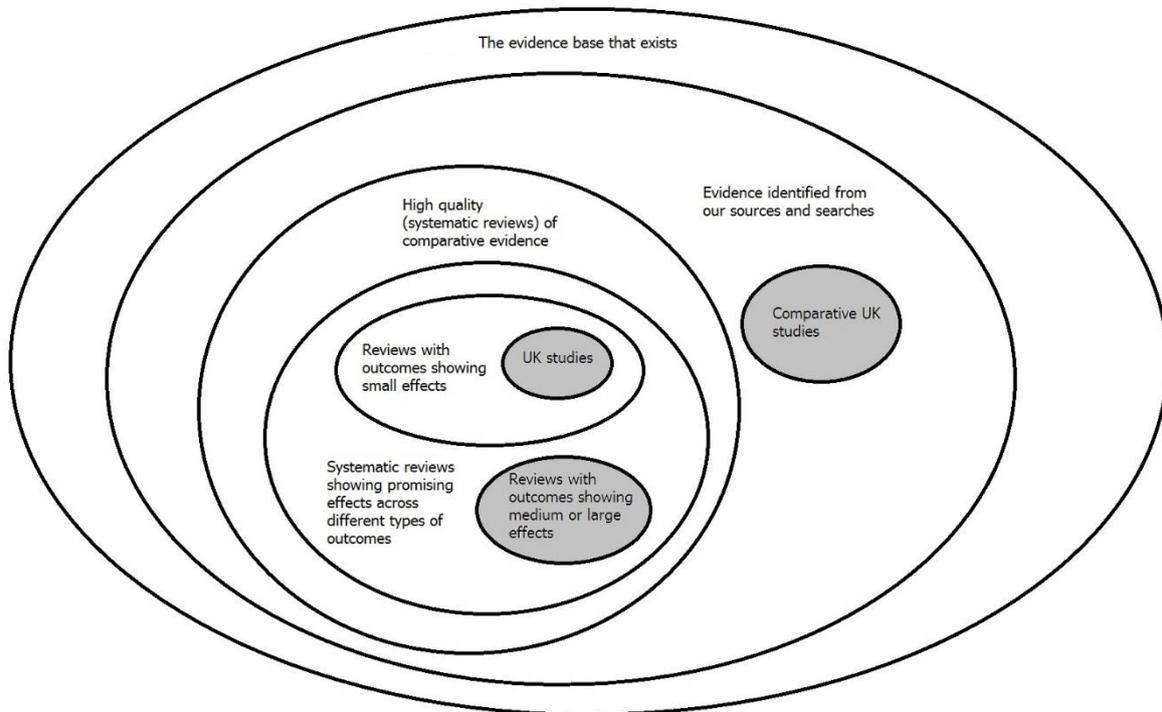
#### *These summaries*

The evidence summaries described below have utilised:

- i) The review evidence showing "medium" or "large" effects
- ii) The UK evidence that was also collected during the original scoping review - aside from any studies already included in i) above
- iii) UK studies listed from within the review evidence showing "small" effects - aside from any studies already included in either i) or ii) above

A pictorial representation of the evidence base used in these summaries (highlighted in grey), in comparison with the size of the entire hypothesised evidence base for person- and community-centred approaches for health and wellbeing, is provided in Figure 1.

**Figure 1: Evidence base used within the context of the existing evidence available on person- and community-centred approaches for health and wellbeing.**



Two reviewers extracted study-level data from each of the included systematic reviews (i.e. those showing 'medium' or 'large' outcome effects), and from the UK studies identified either from within reviews showing small effects, or from the broader search for evidence on person- and community-centred approaches for health and wellbeing. This included (where reported) data on study design, sample size, intervention details (e.g. duration of sessions and/or frequency of sessions), information about the study population (e.g. age, gender and source of recruitment), the comparator(s) of interest and outcomes reported. For the reviews, study quality was documented (where reported) but no attempt was made to prospectively quality assess individual UK studies owing to the available timeframe and absence of any obvious existing quality assessment tool that would be appropriate across all the identified studies.

With regard to interventions, it was noted that there was often a degree of overlap in terms of how the detail of health coaching, peer support and self-management interventions were described in some of the papers. As a result, it was sometimes difficult to decide where the intervention was best included. To clarify this, an algorithm was developed, with feedback from other RTV consortium members, to determine the most appropriate intervention based on details provided in the text of the papers. The algorithm is provided in Figure 2.

**Figure 2 – Algorithm for determining whether interventions were defined as “self-management”, “health coaching” or “peer support”**

What is the focus of the intervention?									
Self management (mentioned in abstract)					General behaviour change (self-management and/or support not mentioned in abstract)		Support (mentioned in abstract)		
Who is the intervention provided by?									
Lay people					Health professionals				
Does it have an education component					Does it have an education component				
Yes		No			Yes		No		
<b>Self-management?</b>		Is there an additional support or behaviour change component?			<b>Self-management?</b>		Is there an additional support or behaviour change component?		
		Yes	No				Yes	No	
Peer support?		Health coaching?	Exclude			Health coaching?	Exclude		
Who is the intervention provided by?									
Lay people with lived experience		Health professionals/lay-people with no lived experience							
<b>Peer support?</b>		Is there an additional self-management or behaviour change component?							
		Yes				No			
		Self-management?		Health coaching?		Exclude			

For each outcome, inference of effectiveness was determined depending on the number of reviews that had shown statistically significant (defined at review level by each review author) effects; if more than one review had done so across different specialties it was considered effectiveness had been shown across specialties, where multiple reviews within the same specialty (but not elsewhere) reported statistical significance for an outcome it was considered effectiveness had been shown within that specialty. It is therefore important to recognise that effectiveness is therefore a function of how well outcomes were reported in each of the reviews, and indeed the original studies included in these reviews.

With regard to both group activity and asset-based approaches, there is a lack of relevant systematic review level evidence in these two emerging areas of practice. These two approaches were therefore chosen based on the criteria and other evidence (e.g. grey literature) and the expertise of the consortium/advisory group and other stakeholders involved in the process. None of the included systematic reviews identified from our scoping review of person- and community-centred approaches for health and wellbeing were deemed to be relevant examples of either group activity or asset-based approaches and so have not been summarised.

# Results

## Peer support

### *Number of reviews & studies*

We identified seven systematic reviews showing promising results in peer support (four on mental health, two on diabetes, one on coronary heart disease (CHD)).[1-7] One, however related to peer support for children (who were not the population of interest but lived with a parent who had a long-standing mental illness) [6] and is reported separately below, leaving six reviews reported in this analysis. The number of studies included in each review ranged from 6 studies [4] to 38 [5]. Aside from the reviews, we identified a further two trials from the UK that had used peer support to help those with long-term conditions [8, 9] namely heart disease and asthma.

### *Study design and quality*

The quality of the evidence included in the reviews was difficult to assess based on the reported study details. While systematic reviews usually indicate the highest level of evidence available, many of these reviews had incorporated evidence from both comparative and non-comparative study designs. One had exclusively included RCT evidence[4], whilst in another, 18% of included studies were RCTs.[5] The number of included qualitative/non-comparative studies reached 60% in one study [1], but mostly the study data were comparative by way of either a control or longitudinal change. Quality assessment processes were reported in five of the seven reviews and overall appears to have been judged positively in two[3, 4] moderate or unclear in a further two[1, 2] and poor in one study.[7] One review specifically noted that it had not placed restrictions on inclusion on the basis of study quality.[6] The UK studies were both randomised comparative studies, although one was an equivalence trial (designed to show that peer support was equivalent to nurse-led education).[9]

### *Sample sizes*

Within the reviews, the sample sizes for comparative studies ranged from 29 [6] to 1827 [5], shows a wide distribution of the sample sizes, with a median of 162 participants. For the UK studies, all trial sample sizes fell within this range (319 to 567 participants).

### *Participants*

The majority of the studies (81%) in the systematic reviews reported at least some characteristics about the population. In 38% specific subgroups were described within the overall study population, (e.g. obese patients with type II diabetes, homeless people or Spanish-speaking adults). For almost a third of the remaining studies (32%) only the diagnosis of the patients (e.g. with mental health problems) was reported. Duration and severity of illness were poorly described (accounted for by 5% and 6% studies respectively) and further baseline characteristics (age, gender, etc.) of the patients did not follow a common pattern or were poorly reported across the studies.

Data within the UK-based trials were more readily available. Of note, the study by Coull and colleagues [8] on heart disease, focused specifically on peer support for older people (aged 50 and over and aged 60 and over respectively), whereas the study by Partridge and colleagues looked at patients with asthma across an age range of 18-87.[8]

### ***Peer Supporters***

The vast majority of reviews did not specify how peers were recruited/trained. The one that did was by Matthew Chinman and colleagues [1], who reported that training varied but typically involved passing a written examination after completing a 30 to 40-hour week of class instruction that addressed topics in recovery, mental illness, medications and rehabilitation. The authors also mentioned that peer support services were becoming professionalised. Organisations such as the International Association of Peer Supporters [10] were developing standards of practice. Peer providers receive training and certification to deliver their services in the field. In addition, a small proportion of the studies in the reviews (18%) reported outcome data on peer supporters themselves.

The UK trials also indicate that peer support required a great deal of training, which could include residential courses,[9] distance learning[9] and training sessions with clinicians.[8, 9] One study paid peers £8.00 per hour (2008 price year) [13] whilst the other indicated that peer supporters were volunteers recruited from the local community, and while this study indicated that travel expenses were offered to participants for attendance, it is not clear if this was also offered to the peer supporters.[9] It should also be noted that in one study more than half i.e. 9/15 of the peers (60%) dropped out over the course of the 22 month trial and it is not clear from other studies whether this is typical for peer support interventions or may be related to the trial conditions.[9]

### ***Interventions***

From the review evidence it seems that interventions in peer support tend to focus on case management. Case management is commonly used in mental health specialties, and has been defined generally as "a means of co-ordinating services. Each mentally ill person is assigned a 'case manager' who is expected to: (i) assess that person's needs; (ii) develop a care plan; (iii) arrange for suitable care to be provided; (iv) monitor the quality of the care provided; and, (v) maintain contact with the person".[11] As our studies show, case management can be provided by peers, but in healthcare case management can (and is likely more commonly) provided by health professionals.

However, there were wide variations in focus depending on the specialty where peer support is applied and so the focus on case management may simply be a function of the fact that the vast majority of the reviews in peer support come from within mental health.

### ***Specialty specific characteristics***

Aside from case management (reported in nine studies [1, 5, 7]), peer support services in mental health could be categorised into two other broad groups: services delivered by peers and services that include peers within usual teams.

Both group support and one-to-one support [1, 5, 7] systems have been used. Furthermore, a few studies reported that peers can also be used to train clinicians. The duration and settings in which peers provided their services were poorly reported. Some of the review studies described peers delivering a set curriculum,[1] and this may be an area where peer support interventions overlap with health coaching or self-management education initiatives whereby the coaches or tutors are people with similar characteristics to the participants.

In diabetes, group face-to-face and Internet/telephone settings were the most common means of providing peer support (each setting was reported in five studies [2, 3]). In addition, other three studies [2] reported that peer support was facilitated by both group face-to-face and telephone interactions. The duration of the programmes ranged from 6 weeks to 2 years. The UK study in asthma also reported a mixture of face to face and telephone support over the course of the intervention lasting three weeks with follow up for 1 year.[9]

In terms of CHD, out of six studies [4], three reported that peer support was provided at patients' homes and the other three reported peer support via telephone. However, in the additional UK study by Coull and colleagues on heart disease, support was provided in the form of monthly 2 hour sessions held in the community, over the course of a year.[8]

### **Comparators**

The interventions, with which peer support was compared, were poorly reported within the systematic reviews. Even when described as "usual care", it was often not clear whether this meant no care was provided, or whether an intervention was instead provided by non-peer professionals. Six studies used "standard" case management as a comparator. Within the UK, one study compared peer support against usual care [8] whilst the equivalence trial compared the equivalent support as provided by professionals rather than peers.[9]

### **Outcomes**

Details of reported outcomes in peer support are summarised in Tables 1 to 5 depending on outcome type. The numbers reported relate to the studies within the reviews in each specialty that reported each outcome, out of all studies in the included reviews that reported any outcome of relevance.

**Table 1: Peer Support – Resource Use Outcomes**

Outcomes	Specialities	Resource Use		
		Significant <sup>1</sup>	Non-Significant	Non-Reported
Hospitalisation	Mental Health	2	3	7
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>3</b>	<b>20</b>
Hospital Stay	Mental Health	3	0	9
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>3</b>	<b>0</b>	<b>22</b>
Hospital Admission	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>
Primary Care visits	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Bed days saved	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>
Readmission Rates	Mental Health	1	1	10
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>23</b>
Use of Emergency Services	Mental Health	1	1	10
	Diabetes	0	0	11
	CHD	1	0	1
	<b>Total</b>	<b>2</b>	<b>1</b>	<b>22</b>
Discharge Rates	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>
Inpatient Days	Mental Health	2	0	10
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>23</b>
Service Uptake	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
No of unmet needs	Mental Health	1	1	10
	Diabetes	0	0	11

<sup>1</sup> In some studies significance was assumed from the text if no p-values were reported but a significant change was mentioned. If not, non-significance was assumed.

	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>23</b>
Resource Use	Mental Health	0	0	12
	Diabetes	0	0	11
	CHD	0	1	1
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>

**Table 2: Peer Support – Biomedical Outcomes**

<b>Biomedical Outcomes</b>				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
HbA1c	Mental Health	0	0	12
	Diabetes	5	4	2
	CHD	0	0	2
	<b>Total</b>	<b>5</b>	<b>4</b>	<b>16</b>
Blood Pressure	Mental Health	0	0	12
	Diabetes	2	1	8
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>1</b>	<b>22</b>
BMI	Mental Health	0	0	12
	Diabetes	3	1	7
	CHD	0	0	2
	<b>Total</b>	<b>3</b>	<b>1</b>	<b>21</b>
Body Fat	Mental Health	0	0	12
	Diabetes	2	0	9
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>23</b>
Lipids	Mental Health	0	0	12
	Diabetes	0	3	8
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>3</b>	<b>22</b>
Cholesterol	Mental Health	0	0	12
	Diabetes	2	0	9
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>23</b>

**Table 3: Peer Support – Behavioural Outcomes**

<b>Behavioural Outcomes</b>				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Physical Activity	Mental Health	0	1	11
	Diabetes	4	1	6
	CHD	0	0	2
	<b>Total</b>	<b>4</b>	<b>2</b>	<b>19</b>
Healthy Behaviours	Mental Health	0	0	12
	Diabetes	1	0	10
	CHD	1	1	0

	<b>Total</b>	<b>2</b>	<b>1</b>	<b>22</b>
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**Table 4: Peer Support – Health and Wellbeing Outcomes**

<b>Health Outcomes</b>				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Symptoms	Mental Health	2	4	6
	Diabetes	2	0	9
	CHD	0	0	2
	<b>Total</b>	<b>4</b>	<b>4</b>	<b>17</b>
Wellbeing	Mental Health	0	1	11
	Diabetes	2	0	9
	CHD	1	0	1
	<b>Total</b>	<b>3</b>	<b>1</b>	<b>21</b>
Self-Esteem	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Social Functioning	Mental Health	2	2	8
	Diabetes	2	1	8
	CHD	0	0	2
	<b>Total</b>	<b>4</b>	<b>3</b>	<b>18</b>
Quality of Life	Mental Health	3	6	3
	Diabetes	2	1	8
	CHD	0	0	2
	<b>Total</b>	<b>5</b>	<b>7</b>	<b>13</b>
Burden of Care	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Engagement	Mental Health	1	1	10
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>23</b>
Empowerment	Mental Health	5	3	4
	Diabetes	0	1	10
	CHD	0	0	2
	<b>Total</b>	<b>5</b>	<b>4</b>	<b>16</b>
Community Integration	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>
Role of Involvement	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>
Recovery	Mental Health	3	0	9
	Diabetes	0	0	11
	CHD	0	0	2

	<b>Total</b>	<b>3</b>	<b>0</b>	<b>22</b>
Satisfaction	Mental Health	4	0	8
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>4</b>	<b>0</b>	<b>21</b>
Disability	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Quality of treatment relationships	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	1	1
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>23</b>
Self-confidence	Mental Health	2	0	10
	Diabetes	2	1	8
	CHD	1	0	1
	<b>Total</b>	<b>5</b>	<b>1</b>	<b>19</b>
Self-care	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	1	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>23</b>
Hopefulness	Mental Health	2	0	10
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>23</b>
Patient Activation	Mental Health	1	1	10
	Diabetes	2	0	9
	CHD	1	0	1
	<b>Total</b>	<b>4</b>	<b>1</b>	<b>20</b>
Medication Adherence	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Distress/Anxiety	Mental Health	0	0	12
	Diabetes	0	1	10
	CHD	1	0	1
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>23</b>
Knowledge	Mental Health	0	0	12
	Diabetes	3	1	7
	CHD	0	0	2
	<b>Total</b>	<b>3</b>	<b>1</b>	<b>21</b>
Depression	Mental Health	0	0	12
	Diabetes	0	1	10
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
Psychological Outcomes	Mental Health	0	0	12
	Diabetes	0	0	11
	CHD	0	2	0
	<b>Total</b>	<b>0</b>	<b>2</b>	<b>23</b>

**Table 5: Peer Support – Social Outcomes**

<b>Social Outcomes</b>				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Employment	Mental Health	0	1	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>24</b>
No of homeless days	Mental Health	1	0	11
	Diabetes	0	0	11
	CHD	0	0	2
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>24</b>

Overall, across the specialties where peer support was applied in the reviewed comparative studies, outcomes showed significant improvements in the following health outcomes: social functioning and perceived support [2, 5], quality of life [1, 2, 3, 5, 7], confidence/self-efficacy [2, 4, 5], functioning/self-care [4, 5] and in patient activation (although it is unclear how consistently patient activation has been defined within the studies included in these reviews) [1, 2, 4]. Also, two studies showed significant improvements in healthy behaviours [2, 4]. Within a UK context, similar improvements were seen in behaviour (e.g. changes to diet or time spent walking) and physical function in the heart disease study by Coull and colleagues. [8]

Aside from those mentioned above, there were additional outcome improvements that tended to be context-specific, hence, they can be analysed in terms of the three specialties: mental health, diabetes, CHD.

1. Mental health

Health outcomes such as empowerment, recovery and hopefulness were improved significantly as a result of peer support. Being reported in six studies, empowerment was the dominating outcome [1, 5].

2. Diabetes

Peer support in diabetes enabled significant improvements in terms of depression [2, 3], disease-related knowledge [2, 3], wellbeing [3] and symptoms [2]. Biomedical outcomes also showed significant improvement, e.g. in HbA1c, weight loss, cholesterol and glycaemic control [2, 3]. HbA1c was the dominating outcome as improvements were reported in six studies [2].

3. Coronary Heart Disease (CHD)

One review [4] that summarised six studies about peer support for patients with CHD showed significant improvement, but none were reported in more than one study within the review: wellbeing, anxiety and use of emergency services. One UK study in this area also found use of CHD outpatient services was also reduced in the peer support group, which may or may not be related to the fact that adherence to medication improved in this group compared to the control.[8]

Of other outcomes reported, the evidence was equivocal with regard to resource use outcomes including hospitalisations,[1, 5, 7] readmission rates [5, 7] and length of stay, [1, 5, 7] None of the reviews reported any significant improvement with regard to patient satisfaction.[1, 5]

One review [6] did not really relate to helping patients with a mental illness, but the children of those with a mental illness. This review covered 12 peer support studies. Within this context peer support was offered in the form of school holiday or after school programs, or camps. Results suggest depressive symptoms (in the children) and knowledge of mental illness may be improved, as could self-esteem. But while the evidence base on peer support in this context is still emerging, the potential harms to young people (e.g. exposing them to unsettling information about mental illness) were also noted.

## Self-management education

### *Number of reviews & studies*

We identified twenty one systematic reviews on self-management showing medium or large effects. The reviews focused on various specialties including asthma [12, 13], diabetes [14, 15, 16, 17], mental health [18, 19], arthritis [20, 21, 22], epilepsy [23, 24], temporomandibular<sup>2</sup> disorders [25], cardiovascular disease [26] and irritable bowel syndrome [27] and COPD [28]. There also was one review which included a mixture of long-term conditions including inflammatory bowel disease, asthma, arthritis and diabetes [29].

The number of studies included in each review ranged from 2 studies [24] to 50 [13]. A total of 278 studies were included in the main analysis.

In addition, we identified 12 systematic reviews that had shown “small” effects, and so we considered 41 UK-based studies included in these reviews. [30 – 42] A further 12 UK-based studies were identified from our initial search for systematic reviews.[43-54]

### *Study design and quality*

There was only one review [26] that included a qualitative study. This means that the vast majority of the studies were comparative. The proportion of RCTs in each study ranged from 31% [14] to 100% [13, 17-26, 29]. Among the reviews, 12 reported details of quality assessment.[13, 17-18, 20-27, 29] Of these, study quality was judged to be positive in four studies[17, 20, 26-27] and moderate in one study[23]. Study quality was judged to be generally negative in five studies[13, 18, 21, 22, 24] and in the remaining two studies the results of the quality assessment were unclear.[25, 29] From the 53 UK studies, the vast majority of studies were also randomised controlled trials (51 studies, 96.2%).

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<sup>2</sup> As defined in this study as including “a broad range of conditions associated with oro-facial, head and neck pain and dysfunctions. These conditions may be related to masticatory or neck muscles, the central and peripheral nervous system or the TMJ [temporomandibular joint], potentially affecting the social, vocational and emotional lives of patients”

## **Sample sizes**

The sample sizes for comparative studies ranged from 19 [26] to 7000 [14], the median value was 530 participants. Sample sizes were reported for 42 of the 53 UK-based studies (79.2%) and within these 42 studies, sample sizes ranged from 20 to 824, with a median value of 155 participants.

## **Participants**

The majority of the studies (86%) reported at least some characteristics of the population. More than a half of them (54%) reported only the diagnosis of the patients.

A large number of the remaining studies (26%) used specific subgroups in their analysis (e.g. Caucasian teenagers with seizure disorders). The duration and severity of the illnesses were poorly described (accounted for 1% and 5% respectively).

The baseline characteristics (age, gender, etc.) of the patients, was not reported in 9 reviews [47%] and it is difficult to summarise because it did not follow a common pattern, as some studies were specifically for limited age groups (e.g. children [12]).

For the UK evidence, most studies did not specify particular subgroups (beyond diagnosis with the condition of interest) apart from limits on the age of the participant (e.g. aged 16 years or over, aged under 80 years old). Participants' age was reported by 32 studies (60.3%) and median age was 51.1 years, (range: 9 to 72.5 years). Gender was not reported for most studies (35 studies; 66.0%) but where it was, the average proportion of female participants was 56.3%.

## **Interventions**

Overall, details of the interventions were rarely fully reported. For example, details of who provided the intervention (e.g. a health professional or lay person) were absent in 87% of studies across the specialties. Poor reporting was particularly problematic in arthritis (100%) [20-22], whereas for Chronic Obstructive Pulmonary Disease (COPD) this information was reported in most (89%) of studies [28]. In terms of the main focus of the intervention, all were required to contain an education component, but additional aspects of care e.g. counselling, support were also available within some programmes. In terms of how interventions were provided, unless otherwise stated or not reported at all, it was assumed that interventions took place in a face to face setting, with only 1% (2 studies) where the self-management support was by telephone and 2% (5 studies) where it was online or on video.

Among those interventions provided face to face (236 studies), 19% of studies were group interventions, whilst 7% were provided on a one-to-one basis, while the remaining 74% did not report how many participants received the intervention at the same time.

Duration of the interventions varied widely from 2 days [55] to 5 years [16]), though in 8% cases duration was not stated, and for these studies we used the follow-up period as an indicator, although it should be noted that the effect of doing so is to potentially over-estimate the length of the intervention itself. In general, median duration across all studies was 12 weeks.

The way in which self-management interventions are delivered is likely to vary depending on the specialty under consideration, though it should be recognised that there are some components common across all long-term conditions (LTCs).

For the UK studies, 34 studies (64.1%) reported information on providers of the intervention, and in the majority of cases (23 studies; 67.6%) self-management interventions are co-ordinated by health professionals. Lay or other profession (e.g. researcher-led) interventions occurred in 6 studies (17.6%) and in a further five studies (14.7%) it was not clear.

Data on whether UK studies provided group or individual self-management education was not available for 22 studies (41.5%). Where these data were available, group self-management was provided in 14 studies (45.2%) and individual self-management was provided in 18 studies (58.1%).

With regard to the frequency of interventions for the UK studies, data were available from 25 studies (47.2%). Of these studies, two were provided in a single session, though the duration of that session was 30 minutes in one study and six hours in the other. Both were diabetes interventions. Among the remaining studies, 7 (28%) were provided sporadically (i.e. one or two visits were made and then there may have been possible telephone contact for the remainder of the intervention period), whereas 16 studies (64%) regular (e.g. weekly or fortnightly) sessions were provided. Sporadic interventions typically involved one or two visits initially (usually between 30 to 50 minutes in duration) and then followed up at particular intervals at least twice and usually by telephone). Regular contact was typically provided in the form of weekly sessions. The median duration of the intervention was 8 weeks and the median number of sessions was also eight. Session duration ranged from 1.5 hours to 3.3 hours (median duration 2 hours).

### ***Specialty-specific characteristics***

In diabetes [14- 17] and mental health [18, 19, 55] provider characteristics were reported in 8 and 5 studies respectively. In these specialties, interventions tended to be conducted by health professionals. In diabetes, this was the case for 75% of studies, whereas in mental health this was true of 80% of studies.

Other specialties utilised lay workers more frequently. For example, in asthma [12, 13], 2 of the three studies (66%) reporting provider characteristics reported peer-led self-management interventions. In COPD this was the case for all (17) studies reporting this detail, although it should be noted that this could be due to the inclusion criteria of studies within the review specifying lay worker involvement.

Self-management interventions can focus on a range of activities to help improve patients' lives and their ability to manage their long-term condition. In diabetes,

the focus area(s) of interventions was mixed, and almost half (47%) of studies included educational, behavioural and psychological components.

Education was the main focus area for a number of specialties including 93% of the 41 asthma studies reporting this, 86% of the 7 cardiovascular disease (CVD) studies, 43% of 4 epilepsy (43%) studies and 96% of 19 COPD studies, whereas in arthritis, in most (61%) of the 51 studies, interventions focused on symptom management.

In mental health and temporomandibular disorders, focus was not clear or not reported.

In terms of setting, poor reporting and population characteristics make it difficult to generalise, but there are indications that community settings are preferred. For example, in diabetes, out of 7 studies that reported the setting, 4 (57%) used the community setting, 3 (43%) used clinical settings. In pulmonary disease, 94% of studies reported the community setting, and in asthma 100% of 10 studies reporting this information took place in the community, although in this case it is because all ten studies came from the same review of school-based interventions for children.

In the rest of the specialties (arthritis, temporomandibular disorders, CVD, epilepsy and mental health), the setting was very poorly reported.

As a part of self-management education, leaflets, booklets, guidebooks, CDs and videos were included in the following specialties: mental health (in 10% of all studies), CVD (in 67% of all studies), irritable bowel syndrome (in 18% of all the studies). In the review that included more than one specialty (bowel disease, asthma, arthritis and diabetes) [29], 100% of all the studies reported using additional resources.

Compared with the overall median duration of 12 weeks, across the various specialties, average duration was characterised by shorter length interventions in arthritis, where duration was on average 5 weeks. In diabetes, mean duration was longer than average, at 37 weeks. For the remaining specialties it ranged from between 8.3 and 23 weeks (e.g. for asthma it was 8.3 weeks, for epilepsy - 10 weeks, mental health - 14 weeks, bowel disease - 18 weeks, temporomandibular disorders - 23 weeks).

### **Comparators**

The interventions with which self-management was compared, were poorly reported within the systematic reviews. Even when described as "usual care", it was often not clear whether this meant no care was provided, or whether an intervention was instead provided by professionals. Out of those studies that reported something, 26% reported "usual care" and 27% reported "wait-list-control" as a comparator.

### **Outcomes**

Details of reported outcomes in self-management are summarised for each of the reviews in Tables 6 to 10 depending on outcome type. The numbers reported

relate to the studies within the reviews in each specialty, which reported each outcome, out of all studies in the included reviews that reported any outcome of relevance.

**Table 6: Self-management – Resource Use outcomes**

Resource Use				
Outcomes	Specialities	Significant <sup>3</sup>	Non-Significant	Non-Reported
Hospitalisation	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	2	2	1
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>28</b>
ED/ER visits	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	3	2	0
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>5</b>	<b>2</b>	<b>25</b>
Costs	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	1	1	3
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>30</b>
Hospital	Diabetes	0	0	8

<sup>3</sup> In some studies significance was assumed from the text if no p-values were reported but a significant change was mentioned. If not, non-significance was assumed.

Admissions	Mental Health	0	0	3
	Asthma	2	0	3
	COPD	0	0	1
	CVD	1	0	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>3</b>	<b>0</b>	<b>29</b>
Inpatient Use	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	2	0	3
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>	
Medicine Services Utilisation	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	1	1	3
	COPD	0	0	1
	CVD	1	0	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	1	0	0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>28</b>	

**Table 7: Self-management – Biomedical outcomes**

Biomedical Outcomes				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Lung Function	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	1	0	4
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5

	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
HbA1c	Diabetes	3	1	4
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	1	0	0
	<b>Total</b>	<b>4</b>	<b>1</b>	<b>27</b>
Self-Monitoring Blood Glucose	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Blood Glucose	Diabetes	0	1	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>0</b>	<b>1</b>	<b>31</b>
Use of Medication	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2

	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
BMI	Diabetes	1	1	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	1	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	1	0	0
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>28</b>
Blood Pressure	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	1	0	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Glycohemoglobin	Diabetes	2	0	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Lipid Levels	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic	0	0	1

	disease			
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Hypoglycaemia	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Cholesterol	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	1	0	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Epileptic Seizures	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	2	0	1
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>

**Table 8: Self-management – Behavioural Outcomes**

Behavioural Outcomes				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Physical Activity	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3

	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Disease Related Activity	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>

**Table 9: Self-management – Health and Wellbeing outcomes**

Health Outcomes				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Self-Efficacy	Diabetes	2	0	6
	Mental Health	0	0	3
	Asthma	1	0	4
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>3</b>	<b>0</b>	<b>29</b>
Depression	Diabetes	1	0	7
	Mental Health	1	0	2
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	1	2	2
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>4</b>	<b>2</b>	<b>26</b>
Diabetes-related	Diabetes	1	0	7

Distress	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Quality of Life	Diabetes	1	2	5
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	2	3
	TMD	0	0	2
	IBS	1	0	1
	Mixed chronic disease	1	0	0
<b>Total</b>	<b>3</b>	<b>4</b>	<b>25</b>	
Physical/Physiological Outcomes	Diabetes	1	1	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	1	0	0
	CVD	1	0	1
	Epilepsy	1	0	2
	Arthritis	1	2	2
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
<b>Total</b>	<b>5</b>	<b>3</b>	<b>24</b>	
Self-Management	Diabetes	1	1	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
<b>Total</b>	<b>2</b>	<b>1</b>	<b>29</b>	
Disease-related Knowledge	Diabetes	3	1	4
	Mental Health	0	0	3

	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	2	1	0
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	1	0	0
	<b>Total</b>	<b>7</b>	<b>2</b>	<b>23</b>
Problem Solving	Diabetes	1	1	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>1</b>	<b>30</b>
Psychosocial Outcomes	Diabetes	1	1	6
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>1</b>	<b>29</b>
Self-rated Health	Diabetes	1	0	7
	Mental Health	1	0	2
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Symptoms	Diabetes	1	0	7
	Mental Health	1	0	2
	Asthma	0	0	5

	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	1	1	0
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>4</b>	<b>1</b>	<b>27</b>
Self-care	Diabetes	1	0	7
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	1	0	1
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Anxiety	Diabetes	0	0	8
	Mental Health	3	0	0
	Asthma	0	0	5
	COPD	0	0	1
	CVD	2	0	0
	Epilepsy	1	0	2
	Arthritis	1	1	3
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>7</b>	<b>1</b>	<b>24</b>
Fatigue	Diabetes	0	0	8
	Mental Health	1	0	2
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Parent's Attitudes	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1

	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Coping	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Fear	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Pain	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	1	4
	TMD	1	1	0
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>2</b>	<b>29</b>
Relief	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2

	Epilepsy	0	0	3
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	1	0	1
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>30</b>
Self-Confidence	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Distraction	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	1	0	4
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>31</b>
Helplessness	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	2	3
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>0</b>	<b>2</b>	<b>30</b>
Disability	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	0	0	5
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	1	0	2

	Arthritis	1	1	3
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>2</b>	<b>1</b>	<b>29</b>

**Table 10: Self-management – Social Outcomes**

Social Outcomes				
Outcomes	Specialities	Significant	Non-Significant	Non-Reported
Absence at School	Diabetes	0	0	8
	Mental Health	0	0	3
	Asthma	1	2	2
	COPD	0	0	1
	CVD	0	0	2
	Epilepsy	0	0	3
	Arthritis	0	0	5
	TMD	0	0	2
	IBS	0	0	2
	Mixed chronic disease	0	0	1
	<b>Total</b>	<b>1</b>	<b>2</b>	<b>29</b>

Overall, across the specialties where self-management was applied in the reviewed comparative studies, outcomes showed significant improvements in the following health outcomes: self-efficacy [12, 16, 17], disease-related knowledge [14, 15, 20, 24, 29], self-rated health [13, 18], physical/physiological outcomes (e.g. joint protection and physical functioning) [16, 24, 26, 28], psychosocial outcomes (e.g. relationships, communication) [14, 16], coping [20, 22, 24], relief [20, 27] and self-management behaviours (SMB) which were not further specified [14-17, 24]. In terms of biomedical outcomes, improvements were seen in blood pressure [14, 26] and cholesterol [16, 26]. Significant improvements were also shown in the use of resources including the number of ER visits [12-14, 23] and medical services utilization [12, 29, 26].

Aside from those mentioned above, there were additional outcome improvements that were not consistently significant across specialties and were therefore context-specific. For example, in asthma, self-management interventions were also shown to improve lung function [12] and reduce absence at school [12, 13], hospitalizations [12] and medical costs [12]. In diabetes, improvements were seen in problem solving [16], self-care [17], HbA1C [14], use of medication [14], glycohemoglobin [14] and blood glucose [15].

Mental Health interventions improved participants' problems with depression [18] and fatigue [18]. Depression was also improved in epilepsy interventions, as were outcomes of disability and seizures [23, 24]. Pain was reduced for

temporomandibular disorders [25] and quality of life showed improvement for those with irritable bowel disease [27].

For arthritis, improvements were seen in participants' self-confidence [20], distraction (as pain coping behaviour) [20] and disease-related activity [21]. Self-care improved in cardiovascular disease, thereby decreasing hospital admissions [26].

UK evidence from one review [31] indicates asthma self-management interventions can lead to lower healthcare use. Four studies reported that it significantly reduced the rate of hospital admissions and re-admissions.[36, 40, 51, 54] However, for utilisation of Primary Care resources (e.g. in terms of GP visits) showed no significant change across three of the four studies reporting this outcome.[46, 48, 52, 54].

In terms of biomedical outcomes, UK studies do not result in improvements in blood pressure or cholesterol.[41, 43, 44] However there is some indication that weight outcomes may be improved by self-management.[41, 43] and for behavioural outcomes, there was also some evidence that interventions could have a significant effect on diet.[36, 38] Nevertheless, often these outcomes are a function of the disease under consideration and the implications are by no means clear. For example, increased use of medication can be a positive change or a negative [41, 43, 47] but it needs to be assumed that the direction of the effect was as intended. Two studies in asthma reported a significant improvement in the number of self-reported asthma plans being written.[52, 53]

For health and wellbeing outcomes, there is evidence from four studies that self-management education improves symptoms [31, 42, 51] and self-efficacy (defined most commonly as 'patient enablement') [31, 44, 45, 46, 49, 50] and knowledge.[33, 36, 53] However, evidence from other outcomes is more mixed, including for quality of life, pain, depression, anxiety, and physical function. For example, two showed significant improvements in anxiety[45, 54] whereas another two found no significant differences in this outcome.[46, 47]

### **Health Coaching**

None of the included reviews in our scoping review of the evidence on person- and community-centred approaches for health and wellbeing were found to be relevant to health coaching. However, five UK studies were identified.[56-60]

These UK-based studies were all randomised controlled trials with sample sizes ranging from 92 to 824 and an average sample size of 388. Two of the studies [56, 58] related to cardiovascular disease (CVD) interventions and the rest were for diabetics.[57, 59, 60]. The setting for the intervention was unclear in two studies,[56, 60] and stated as being community based,[59] home based,[57] or the venue of the clients choice[58] in the remaining studies. With regard to the study by Davies and colleagues[59] it should be noted that this was categorised as health coaching rather than self-management on the basis of how the intervention was described, whereby focus was drawn specifically to the fact that "Learning was elicited rather than taught, with the behaviour of the educators

promoting a non-didactic approach” and “in keeping with theories of self-efficacy, to choose a specific, achievable goal of behaviour change to work on”. [59] However, the title of this study refers to the approach as ‘self-management’, and this perhaps illustrates the difficulties in classifying interventions using the algorithm shown in Figure 2.

One study involved only young people and so the mean age of participants was 13.3 years. [60] For the other studies mean age was 61.7 years. The proportion of women in the studies was on average 46.4%.

The two CVD studies involved lay health trainers, [56, 58] two used health professionals. [59-60] and one used both. [57] One of the lay-led interventions, [56] and one of the health professional courses [59] were group courses with a format similar to that of self-management education programmes, but as neither mentioned self-management as a key component they were categorised as health coaching interventions. The lay led intervention lasted a year, with monthly meetings, whereas the diabetes intervention was provided intensively once or twice to cover the six hour duration of the intervention. In both cases the comparator was usual care.

The other lay-led study used health coaching on a more regular, one-to-one basis within the community, to improve behaviour change among those at risk of CVD. Suggested contact with participants was six times in total over a 3 month period (i.e. once every 2 weeks). The control group received health promotion literature, though it was unclear if this constituted usual care or not. Lay trainers were paid for their time in this study. [58]

The remaining two interventions used a mixture of staff and technology to deliver health coaching in diabetes. One intervention used a diabetes specialist nurse and additional (trained) telephone support staff who contacted patients to cover aspects of diabetes knowledge, lifestyle advice, readiness to change, medication adherence and blood glucose control. The intensity of phone calls was linked to baseline HbA1c levels, with poorer results necessitating more frequent contact within a range of monthly to every three months. [57] In the other technology assisted study, this time involving young people, goal setting with the patient was undertaken at the clinic and enhanced with software providing daily text messages tailored to the individual’s age, sex and insulin regimen. [60] Comparators received usual care in each study and both followed up patients at one year.

In terms of outcomes, six were reported across more than one study. Of these, where reported in two studies health coaching interventions showed significant improvements in exercise and diet, [56, 60] and in adherence to medication/monitoring of condition. [57, 60] However, the evidence was mixed in terms of both HbA1c and weight improvements among the diabetes studies. [57, 59, 60] Of note, one study reported costs, [58] and found that the incremental cost per QALY gained was within the £20,000 threshold (2012 price year). However probabilistic sensitivity analyses indicate that the probability of cost effectiveness of health trainers in this study never exceeded 50%. This suggests

that there is a high degree of uncertainty surrounding the estimates in terms of cost effectiveness.

### ***Group activities***

Group activity is an emerging areas of practice and as such, there is a lack of relevant systematic or review level evidence in the area. None of the evidence identified from our review of person- and community-centred approaches for health and wellbeing were relevant to group activities and so there are no effectiveness data to report for this approach.

### ***Asset-based approaches in a health and wellbeing context***

Asset-based approaches for health and wellbeing are an emerging area of practice and as such, there is a lack of relevant systematic or review level evidence in the area. None of the evidence identified from our review of person- and community-centred approaches for health and wellbeing was relevant to asset-based approaches and so there are no effectiveness data to report here.

## **Discussion**

Overall, it is clear that interventions may affect outcomes differently, in that positive effects may be specialty dependent. Therefore, it is quite difficult to generalise precisely the ways in which the interventions can improve care and commissioners wishing to design a service should consider the context-specific needs of long-term conditions of interest. It should also be noted that effectiveness is also to some extent a function of how well outcomes were reported in the initial studies and also the reviews that compiled data across studies. This means that outcomes not mentioned here are omitted not because there is evidence of an absence of effectiveness, but because there is absence of sufficient evidence of their effectiveness.

Nevertheless, for peer support there is evidence to suggest that this intervention is effective. Commissioners wishing to design a service should consider how much responsibility peers should be given. For example, some studies used a case management system [1, 5, 7], while others trained peers to use a set curriculum. [1] The most appropriate method of peer support may again vary depending on the specialty and population of interest. It is unclear whether particular methods are superior, only that one can expect some positive outcomes, particularly in patient functioning [2], quality of life [1, 2, 3, 5, 7], confidence/self-efficacy [2, 4, 5], self-care [4, 5] and activation. [1, 2, 4] Other forms of evidence indicate that there could be benefits to peers themselves, including rewards of work, transferable skills and personal growth [5]. In addition, particularly for long term conditions, there is evidence that peer support

could be used to help those dealing with but not directly affected by illness [6], and its potential extends beyond the range of long-term conditions, suggesting that it may be easily transferrable to specialties where at present there is a lack of high-quality evidence.

Commissioners should be aware that at this stage, the evidence on whether peer support interventions can positively influence resource use, is still unclear. However, within specific specialties, the evidence highlighted here, particularly for diabetes, mental health and coronary heart disease, provides examples that commissioners can draw on to try and maximise positive outcomes for people.

For self-management, there is also evidence to suggest interventions can significantly improve outcomes. In terms of service design, our results show for diabetes and mental health specialties provider-led services were more prevalent, whereas in respiratory specialties peer or lay-led interventions were preferred. However, it should be noted that it was not always clear whether lay-led interventions also required instructors to have peer experience of the illness or not.

Another key consideration is intervention duration. In the reviewed studies this varied from days to years, which could indicate that some self-management interventions may require longer-term repeat contact with participants, particularly if the long term condition (e.g. diabetes [14-16, 55]) is potentially life-threatening and requires intensive life-changing behaviour. On the other hand, it could be determined by practical issues. For example, the population of interest in identified asthma [12, 13] interventions most commonly was children, and so shorter average durations for asthma interventions may be due to how long the designed studies expected to be able to maintain children's interest and attention.

As the focus of our review required self-management interventions to have an education component (as decided by the earlier shortlisting process), this was reported as a key component of our included studies. So it should be noted that evidence reviews with different inclusion criteria could draw different conclusions about the typical composition of self-management interventions. In any case, for our review there was obviously a strong focus on the educational component.

The provision of educational materials was reported extensively for specialties such as cardiovascular disease (CVD), whereas for irritable bowel syndrome (IBS) and mental health, this was less common. This could be due to the fact that the certain illnesses may be less well-understood than others, hence making it potentially more difficult to design one-size-fits-all self-management materials. The provision of additional education materials within self-management interventions may become less common as more and more information is now available online, although future self-management courses may also have to consider the need to assist participants in navigating their way to high quality sources of online evidence about their illnesses, as otherwise they may be vulnerable to more misleading sources of information.

In any case, it was not the purpose of this review to determine if particular intervention components promote superior outcomes, but rather to assess the

effect of self-management education interventions more generally. And from this we note that promising results can be expected across a range of wellbeing, behavioural, biomedical and resource-use outcomes.

For health coaching we have included studies that may have covered self-management components but had a main focus on motivating participants to change their behaviour. Health coaching interventions show some promise in terms of behaviour change in terms of diet, exercise and adherence to medication. However, the evidence was less clear on cost. It should be noted that the study reporting cost outcomes paid the lay health trainers, and that volunteer-provided coaching could yield different cost-effectiveness estimates. However, the results of the cost-effectiveness study indicate that there is still a wide degree of uncertainty surrounding health coaching, highlighting the need for further research in this area.

As with peer support, and self-management, it was often difficult to draw a line between where an intervention is predominantly a self-management intervention, health coaching or peer support as there is probably overlap between them all.

For group activities and asset-based approaches as yet there is insufficient academic evidence available and so it is not possible to review the effectiveness of these approaches at present.

## **Strengths and Limitations**

The strengths of this review are that we have used an evidence base to inform our results that selected the highest quality evidence (systematic reviews) in a subject area where the vast majority of the available evidence is non-comparative (e.g. service evaluations). We have been consistent in applying our criteria across the reviews and UK evidence we selected in order to establish the outcomes for which there is likely evidence of benefit.

In terms of limitations, as shown in Figure 1, the summarised evidence here represents only a proportion of the wider evidence on these interventions, from within the entirety of the evidence base for person- and community-centred approaches for health and wellbeing. The nature of this particular review process, particularly due to time constraints, meant that it was not possible to identify additional sources of evidence for these particular interventions, other than those identified through our initial search of person- and community-centred approaches for health and wellbeing.

Outcomes summarised represent those reported both by the initial studies, and by the reviews. It is important to note that the choice of outcomes reported by studies influences the extent to which effectiveness can be summarised, and reporting biases are likely. It may be that improvements beyond those indicated in this review might have been seen had they been more consistently collected and/or reported by studies, but on the other hand, different specialties are naturally more likely to prioritise different outcomes and this can be seen for

example in diabetes, where biomedical outcomes are often consistently reported to show change.

There is also a difficulty in that the UK evidence as summarised separately, may constitute only part of the UK evidence base if reviews with “medium” and/or “large” effects also contained UK studies. We were able to ensure that we did not repeat data separately for UK studies that were included in these reviews, but it means that it is difficult to draw conclusions from the separately reported UK data. However, where there is consistency between review and UK study outcomes it should be that the overall effectiveness as systematically reviewed, is applicable to a UK setting. The inclusion criteria of some of the systematic reviews included more than just the comparative evidence. Where possible we have tried to ensure we used comparative data but as the methods were not always well-reported (particularly with regard to comparator groups), it is possible that the outcome data does not always relate to comparative improvements, but rather improvements in the intervention groups over time.

In addition, for two of the shortlisted approaches (group activity and asset-based approaches), factors other than the comparative evidence base influenced their selection owing to the absence of relevant comparative evidence being available because these approaches are still emerging areas of practice..

## Conclusions

In conclusion, for peer support, self-management education interventions and health coaching evidence exists showing effectiveness in relevant outcomes for commissioners. To some extent, the reported benefits may be a function of inconsistent reporting of outcomes. This means that it was often not possible to summarise outcomes where the interventions clearly did not make a difference; more often it was the case that the evidence base was equivocal for other outcomes.

It is not possible to make inferences about the effectiveness of group activities, and asset-based approaches at this time, owing to the absence of available relevant and comparative evidence.

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