PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	A Systematic Review of Pathways for the Delivery of Allergy Services
AUTHORS	Diwakar, Lavanya; Cummins, Carole; Lilford, Richard; Roberts, Tracy

VERSION 1 - REVIEW

REVIEWER	Niall Conlon Department of Immunology St. James's Hospital Dublin Ireland
REVIEW RETURNED	29-Jul-2016

GENERAL COMMENTS	This is an interesting paper in an area ripe for further development The paper reads well The study is by necessity very UK-centric which means its application to other health systems is limited. I recognise that this is driven by the lack of data from other systems. Editorial suggestion page 7 line 53 should read 'patch testing' rather than patchy. You may also wish to include the term sensitisation test (instead of allergy tests) for skin testing as per recent EAACI position statement. You should also note a lack of availability of allergy challenge testing which is after all the gold standard test and increasingly important Reviewer comments - these should be addressed ideally within the discussion section General It should be mentioned that most allergic disease is dealt with perfectly competently by organ specific specialists - eg asthma by the resp physician and eczema by the dermatologist. The weaknesses in this type of care are the lack of a holistic approach and with increasing burden of multiple co-existing conditions the need for multiple specialists. The advantage of allergy training is the opportunity to intervene across several organ diseases as well as the ability to understand and use sensitisation tests Page 8 paragraph 3 Reference 38 - finding that PCP quite confident about managing common allergic conditions conflicts with ref 42 page 10 first line - majority of referrals could easily be managed by primary care with

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	appropriate training. This point - that untrained PCPs actually may have no idea how poor they are at diagnosing and managing allergic disease is important (see also our paper Eur J Dermatol. 2014 May-Jun;24(3):385-6 pointing out that most urticaria patients just require increased antihistamines). Obviously this highlights a training issue. Non physician services (page 9) - the comment that pharmacists have a role in allergy management conflicts with the for profit supply of non evidence based 'allergy' testing criticised by all societies and also by HoL report. I think this actually represents a barrier to the involvement of this discipline in allergy care. This merits mention. Page 10 - you should comment on the EAACI knowledge based examination which aims to offer some quality assurance to allergy training across Europe. In the UK Immunologists do the FRCPath exam which is very rigorous in both lab and clinical immunology and allergy Perhaps most importantly - allergy is not recognised as a specialty in many countries. Without this most basic concept it is unlikely that service development will gain any traction whatsoever at governmental or planning level. The conflict between allergy and immunology specialties in the UK should not be understated in terms of the potential damage it is causing. I agree with the final conclusions but the absence of allergy and immunology training in many UK and Irish medical schools means that this failure will be unavoidably propagated. Unless we deal with this allergy will continue to be viewed as esoteric despite the disease burden and our PCPs will continue to get their training from the pages of the daily mail This is a useful paper and it should be published with minor changes as outlined above

REVIEWER	Dermot Ryan Honorary Clinical Research Fellow Allergy and Respiratory Research Group, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh. Doorway 3, Medical School, Teviot Place, Edinburgh EH8 9AG I am the current chair of the Primary Care Interest Group of the European Academy of Allergy and Clinical Immunology
REVIEW RETURNED	29-Jul-2016

GENERAL COMMENTS	A sorely needed piece of work: Congratulations to the authors. In a way it is good to know that so much work has been undertaken in the UK, although this has led to few substantive changes in delivery of allergy care, and somewhat alarming that so little has taken place outside of these shores. I hope my comments serve to improve the article somewhat. Page 4 Line 11. Suggest adding reference Gupta R, Sheikh A, Strachan DP, Anderson HR. Time trends in allergic disorders in the UK. Thorax 2007;62:91–96. Page 4 Line 25: Many patients referred to secondary care could be

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	managed in primary care, freeing up specialist resources Conlon NP, Abramovitch A, Murray G, O'Hanrahan A, Wallace D, Holohan K, et al Allergy in Irish adults: a survey of referrals and outcomes at a major centre. Irish Journal of Medical Science (1971-). 2015 Jun 1;184(2):349-52 Page 5 line 6: I suspect there may be merit in devoting a paragraph to the broader economic implications of poorly managed allergic disease such as the costs of presenteeism and absenteeism e.g. Lamb CE, Ratner PH, Johnson CE, Ambegaonkar AJ, Joshi AV, Day D, Sampson N, Eng B. Economic impact of workplace productivity losses due to allergic rhinitis compared with select medical conditions in the United States from an employer perspective. Current medical research and opinion. 2006 Jun 1;22(6):1203-10. Page 5.Line 46 I think a more comprehensive exposition of search terms used as appears in the appendix, should appear in the body of the text (this may be an editorial decision) Page 9 line 24:The reviewer is not as optimistic concerning the abilities of pharmacists and suggests replacing the word can with could,throughout, contingent on appropriate training and quality checks. One of the major limitations of pharmacists is that they are not clinicians. Page 10 ref 42 a more pertinent reference is Jones RB, Hewson P, Kaminski ER. Referrals to a regional allergy clinic-an eleven year audit. BMC public health. 2010 Dec 29;10(1):790.which could also be used to supplement the Conlon reference made above. Pages 12 and 13 this is an unintentional misrepresentation of the Finnish Allergy Prevention model which is just that: A model aimed at primary prevention based on encouraging tolerance to antigens, rather than a reorganisation of allergy services,although that plays a small part in the scheme. I would suggest rewriting this para along the lines which have been described on page 15 which provide a more complete and accurate perspective. Page 21 Reference Agache (line 25) The authors of this publication belong to the EAACI Task Force for Allergy Management in Primary Care. IPCRG: International Primary Care Respiratory Group.

REVIEWER	Dr Laura Bonnett University of Liverpool, United Kingdom
REVIEW RETURNED	07-Sep-2016

GENERAL COMMENTS	The quality of writing is excellent and the manuscript has a very well thought-out methods section. Table 1 is also very informative and clear. However, I have serious concerns that this manuscript does not read like a systematic review, particularly within the results section. In my opinion, the article reads like a personal opinion with references rather than a systematic review. I have attempted to describe the issue further below, as well as proposed suggested improvements. MAJOR REVISIONS 1. I suggest that the authors read other systematic reviews to understand how narrative results are presented in an un-opinionated and fact-driven way. For example, I would suggest that the authors continue to divide their results section into different care pathways. I would then suggest that they discuss the number of publications which report data for that pathway. From that point the authors should begin to say statements such as "three publications highlighted deficiencies due

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	to inadequate allergy training of PCPs,..." "In particular 20/50 allergy nurses interviewed in Smith 2016 stated..." This is a good example of a narrative systematic review in my opinion: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001903.pub3/full 2. Please try to include as many numerical results as possible. I appreciate that many papers may not include numerical results, or they present different numerical results across manuscript. However, if there is a p-value, or even a percentage of people who said... it would help to improve the quality of your systematic review. MINOR REVISIONS 1. Abstract, Methods, line 3 - do you mean "narratively" rather than "normatively"? 2. Abstract, Results - these read as bold statements rather than balanced view points based on established and identified evidence. Please ensure you present the evidence. 3. Methods, Data sources - your search was run in 1st October 2015, nearly 1 year ago. I therefore suggest that you rerun the search before this manuscript is published to ensure you have inlcuded any relevant recent publications. 4. Methods, Selection of the literature - How many people were involved in the selection of the literature? Cochrane guidelines suggest at least 2. 5. Methods, Data extraction - Again, was data double extracted i.e. by two people? This is also a recommendation of the Cochrane Collaboration. Also, did you pre-pilot the data extraction form? 6. You need to include a risk of bias assessment for each included study. You mention within the methods section that you will do so, but I cannot see any evidence. The PRISMA checklist says it is contained within Table 1, but I cannot identify this information. 7. Table 1 - you need to explain what Level Primary, and Level Secondary means.

VERSION 1 – AUTHOR RESPONSE

REVIEWER 1:

1. The study is by necessity very UK-centric which means its application to other health systems is limited. I recognise that this is driven by the lack of data from other systems.

2. page 7 line 53 should read 'patch testing' rather than patchy. You may also wish to include the term sensitisation test (instead of allergy tests) for skin testing as per recent EAACI position statement. You should also note a lack of availability of allergy challenge testing which is after all the gold standard test and increasingly important

This section has been altered in line with the previous recommendation of the editor. The reference to patchy services has been deleted.

3. Reviewer comments - these should be addressed ideally within the discussion section

General
i. It should be mentioned that most allergic disease is dealt with perfectly competently by organ specific specialists - eg asthma by the resp physician and eczema by the dermatologist. The weaknesses in this type of care are the lack of a holistic approach and with increasing burden of multiple co-existing conditions the need for multiple specialists. The advantage of allergy training is the opportunity to intervene across several organ diseases as well as the ability to understand and

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use sensitisation tests

Thank you for this point. We agree with the reviewer completely. This is now included in the discussion [page 17] and reads as follows:

“Lack of specialists in allergy results in the referral of individuals to specialists who are able to deal with individual manifestations of the condition (e.g. respiratory physicians for allergic asthma; ophthalmologists for allergic eye disease). Organ based specialists play a very important role in the management of allergic disease. Indeed, in some instances (e.g. children with very severe disease), their input is essential. However, specialists in allergy can provide clinically effective and potentially cost effective services by intervening across several of these conditions for most patients(20). “

ii. Reference 38 - finding that PCP quite confident about managing common allergic conditions conflicts with ref 42 page 10 first line - majority of referrals could easily be managed by primary care with appropriate training. This point - that untrained PCPs actually may have no idea how poor they are at diagnosing and managing allergic disease is important (see also our paper Eur J Dermatol. 2014 May-Jun;24(3):385-6 pointing out that most urticaria patients just require increased antihistamines). Obviously this highlights a training issue.

Again, this is a very important issue. Although we have addressed it in the paper, we have now added a further comment to emphasise this issue better [page 16]

“However, a UK survey has shown that their confidence in managing allergies in children (44)and initiating referrals appropriately is limited. Whilst PCPs in this particular survey felt confident about managing adults, studies have shown that most individuals referred to secondary care could have been managed effectively in primary care(23, 50, 58).”

iii. Non physician services (page 9) - the comment that pharmacists have a role in allergy management conflicts with the for profit supply of non evidence based 'allergy' testing criticised by all societies and also by HoL report. I think this actually represents a barrier to the involvement of this discipline in allergy care. This merits mention.

Thank you again for making this point. This is indeed an area of concern- nevertheless, none of the publications make a reference to it explicitly. It was, however, brought up during expert interviews for the House of Lords Committee. We have included this in the results section under the non physician services subsection [page 10]. It reads as follows:

“The House of Lords committee suggested that all pharmacists be formally trained in allergy to that ensure high quality advice is provided to all patients(18). This committee also reported concerns from clinicians regarding availability of unvalidated tests over the counter for allergies in some establishments(18). There are, however, no publications to date formally assessing the role of pharmacists in the diagnosis and management of allergy.”

iv. Page 10 - you should comment on the EAACI knowledge based examination which aims to offer some quality assurance to allergy training across Europe. In the UK Immunologists do the FRCPath exam which is very rigorous in both lab and clinical immunology and allergy

This has now been included in the discussion section [page 18]. It reads as follows:

“The heterogeneity in specialist training across Europe is also being addressed with the introduction of the European Examination in Allergology and Clinical Immunology since 2008 by the European Academy of Allergy and Clinical Immunology (EAACI). The aim of this examination is to “raise

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standard of allergology and clinical immunology in Europe" and to "facilitate the exchange of young people trained in Allergology and Clinical Immunology" in Europe (60). "

v. Perhaps most importantly - allergy is not recognised as a specialty in many countries. Without this most basic concept it is unlikely that service development will gain any traction whatsoever at governmental or planning level.

We have emphasised this point in the discussion by adding some more statements to the pertinent paragraph. It now reads as follows:

"Although numerous publications have made a compelling case for more specialist centres (3, 18-21, 33), these have not been forthcoming. Many factors appear to contribute to this apparent inertia (21)- the important ones being lack of adequate central funding to increase training numbers for specialists, lack of interest in allergy services amongst fund holders (23), lack of clarity regarding the role of various specialists involved(21). Another important issue is the lack of formal training programmes in allergy in many countries(3). This not only blights the care of individuals with allergy in these countries, but also prevents the speciality being taken seriously by decision makers."

vi. The conflict between allergy and immunology specialties in the UK should not be understated in terms of the potential damage it is causing.

We agree. However, to delve into the issue in greater detail would not be within the scope of this review.

I agree with the final conclusions but the absence of allergy and immunology training in many UK and Irish medical schools means that this failure will be unavoidably propagated. Unless we deal with this allergy will continue to be viewed as esoteric despite the disease burden and our PCPs will continue to get their training from the pages of the daily mail

This is a useful paper and it should be published with minor changes as outlined above

REVIEWER 2:

1. Page 4 Line 11. Suggest adding reference Gupta R, Sheikh A, Strachan DP, Anderson HR. Time trends in allergic disorders in the UK. Thorax 2007;62:91–96.
2. Page 4 Line 25: Many patients referred to secondary care could be managed in primary care, freeing up specialist resources Conlon NP, Abramovitch A, Murray G, O'Hanrahan A, Wallace D, Holohan K, et al Allergy in Irish adults: a survey of referrals and outcomes at a major centre. Irish Journal of Medical Science (1971-). 2015 Jun 1;184(2):349-52

Thank you.

These references have been added to the paper. The Conlan paper has been included in the review (since it came up in the updated search) and has been described in some detail within the review table.

3. Page 5 line 6: I suspect there may be merit in devoting a paragraph to the broader economic implications of poorly managed allergic disease such as the costs of presenteeism and absenteeism e.g. Lamb CE, Ratner PH, Johnson CE, Ambegaonkar AJ, Joshi AV, Day D, Sampson N, Eng B. Economic impact of workplace productivity losses due to allergic rhinitis compared with select medical

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conditions in the United States from an employer perspective. Current medical research and opinion. 2006 Jun 1;22(6):1203-10.

Thank you for this excellent suggestion. We have added a paragraph in the introduction section to reflect the economic impact of allergic rhinitis to make a case for improving services. The paragraph now reads as follows:

“There is a growing body of evidence to the contrary, however. It is now established that children with food allergies are more anxious than those with insulin dependent diabetes, and tend to have overprotective and very anxious parents (25). This is also true of adolescents with a history of anaphylaxis (26). In addition, the costs of allergies can be considerable. Allergy and related conditions are estimated to cost the UK NHS about £ 1 billion per year(27). Productivity losses associated with allergic rhinitis in the USA were higher than those due to stress, migraine and depression(28). Studies have shown that effective allergy services can not only improve quality of life, but can also be cost-saving(29, 30). Hence there is an urgent need to impress upon policy makers the importance and wisdom of investing in the improvement of allergy services.” {ref 28 is Lamb et al}

4. Page 5.Line 46 I think a more comprehensive exposition of search terms used as appears in the appendix, should appear in the body of the text (this may be an editorial decision)

The search terms have been left in the appendix for now, but we are happy to include them in the main body of the text, if required and suggested by editors.

5. Page 9 line 24:The reviewer is not as optimistic concerning the abilities of pharmacists and suggests replacing the word can with could,throughout, contingent on appropriate training and quality checks. One of the major limitations of pharmacists is that they are not clinicians.

We have modified the statement as suggested. Paragraph 2 on page 6 now starts as follows:

“Some authors felt that pharmacists could, if adequately trained and sufficiently supervised, provide information to patients regarding techniques for using devices such as nasal sprays, eye drops, adrenaline auto-injectors as well as inhalers for allergy and related conditions…….”
6. Page 10 ref 42 a more pertinent reference is Jones RB, Hewson P, Kaminski ER. Referrals to a regional allergy clinic-an eleven year audit. BMC public health. 2010 Dec 29;10(1):790.which could also be used to supplement the Conlon reference made above.

The reference from Jones et al was included in the discussion as suggested [page 16]. The paragraph now reads as follows:

“Whilst PCPs in this particular survey felt confident about managing adults, studies have shown that most individuals referred to secondary care could have been managed effectively in primary care(23, 50, 58).” {ref 58 is jones et al}

7. Pages 12 and 13 this is an unintentional misrepresentation of the Finnish Allergy Prevention model which is just that: A model aimed at primary prevention based on encouraging tolerance to antigens, rather than a reorganisation of allergy services,although that plays a small part in the scheme. I would suggest rewriting this para along the lines which have been described on page 15 which provide a more complete and accurate perspective.

Thank you. We have now modified this paragraph to ensure that the study is more accurately described. It now reads as follows: [page 15 paragraph 2]

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“There has been a lot of interest lately in the “Finnish model” of service re-organisation. This re-structuring exercise takes inspiration from the successful interventions for asthma in Finland.(32).Whilst acknowledging the differences between asthma and allergy and emphasising the need to understand and improve tolerance to allergens, the architects of this model hope to use the existing asthma infrastructure to improve services for allergy sufferers. They suggest that increased initial outlay into well planned allergy services can reduce the cost and burden of allergic disease in the future (32). The results of this experiment are currently awaited”.
8. Page 21 Reference Agache (line 25) The authors of this publication belong to the EAACI Task Force for Allergy Management in Primary Care.IPCRG: International Primary Care Respiratory Group.

The reference format has been checked against the journal’s (Allergy) recommendation and appears accurate.

REVIEWER 3:

MAJOR REVISIONS
1. I suggest that the authors read other systematic reviews to understand how narrative results are presented in an un-opinionated and fact-driven way. For example, I would suggest that the authors continue to divide their results section into different care pathways. I would then suggest that they discuss the number of publications which report data for that pathway. From that point the authors should begin to say statements such as "three publications highlighted deficiencies due to inadequate allergy training of PCPs,..." "In particular 20/50 allergy nurses interviewed in Smith 2016 stated..." This is a good example of a narrative systematic review in my opinion: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001903.pub3/full
2. Please try to include as many numerical results as possible. I appreciate that many papers may not include numerical results, or they present different numerical results across manuscript. However, if there is a p-value, or even a percentage of people who said... it would help to improve the quality of your systematic review.

Thank you for the comment and the very useful reference. In this review, very few papers had empirical data and hence the synthesis was necessarily narrative and this is typical in this type of review. We felt that assessments of bias and quality could not be justifiably used to evaluate a large group of heterogenous publications, some of which (e.g. the government reports) had many methods included in a single publication. We set out to explore all the pathways proposed for allergy service delivery and aimed to be deliberately inclusive.

Nevertheless, we agree that the results section did not always represent the data and had a lot of opinion statements. This has now been addressed and empirical data have been provided wherever possible.

MINOR REVISIONS
3. Abstract, Methods, line 3 - do you mean "narratively" rather than "normatively"?

This has been modified to narrative.

2. Abstract, Results - these read as bold statements rather than balanced view points based on established and identified evidence. Please ensure you present the evidence.

The results section has been re-drafted. We feel that it now better represents the published evidence.
4. Methods, Data sources - your search was run in 1st October 2015, nearly 1 year ago. I therefore

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suggest that you rerun the search before this manuscript is published to ensure you have included any relevant recent publications.

Thank you for this suggestion.

The search has been re-run on the 4th of October 2016 and 4 new publications have been included in the review.

5. Methods, Selection of the literature - How many people were involved in the selection of the literature? Cochrane guidelines suggest at least 2.
6. Methods, Data extraction - Again, was data double extracted i.e. by two people? This is also a recommendation of the Cochrane Collaboration. Also, did you pre-pilot the data extraction form?

Three authors (LD, CC, TR) were involved in selection of data. The data extraction form was piloted using an initial sample of publications and a final format was decided before the final data extraction. This is now made explicit in the methods section.[page 6]. Data were extracted principally by one researcher (LD)and this was scrutinised independently by two of the authors (CC and TR).

“One of the researchers (LD) carried out the searches with help and advice from an information specialist from the University of Birmingham. LD screened all the articles as per the pre-determined criteria. A total of 50% of the unselected articles were reviewed independently by two of the co-authors (25% each) (TR and CC). Disagreements, if any, were resolved through discussion and consensus.
The data was extracted by LD using extraction table that was previously agreed with the other reviewers. Data extraction was scrutinised independently by two other authors (CC and TR).
The data extraction form was piloted initially using a few publications. Appropriate modifications were made before starting the full extraction process.”

7. You need to include a risk of bias assessment for each included study. You mention within the methods section that you will do so, but I cannot see any evidence. The PRISMA checklist says it is contained within Table 1, but I cannot identify this information.

The PRISMA checklist entry refers to the informal assessment of quality in terms of nature of the study, comments on the possible pitfalls of data etc which have been included in table 1. We acknowledge that this can be misleading and hence we have removed this detail from the checklist.

As previously discussed, the objective of the review was to identify as many different published pathways for allergy service delivery as possible from English literature. We found very few empirical studies on this topic.
Given the heterogeneity of the reviewed papers, we did not carry out a formal analysis of bias or quality. This has now been explained in the methods section also. [page 7]
We have now included this point in the study limitations as well. [page 19]

Page 7 (methods):

“Most of the articles were descriptive and hence the analysis followed a narrative synthesis. Since the objective of the report was to explore options for service delivery, the review was designed to be inclusive. Publications were, therefore, not included or rejected based on quality criteria.”
Page 19 (limitations):
“Most of the included studies had little empirical data and therefore a formal quality assessment of the publications was not carried out.”

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8. Table 1 - you need to explain what Level Primary, and Level Secondary means.

Thank you- this has now been explained.

VERSION 2 – REVIEW

REVIEWER	Niall Conlon St. James's Hospital Dublin Ireland
REVIEW RETURNED	24-Nov-2016

GENERAL COMMENTS	From my point of view my editorial comments have been addressed. I think this new version of the paper merits publication and congratulate the authors on this much needed work

REVIEWER	Dermot Ryan Allergy and Respiratory Research Group, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh. Doorway 3, Medical School, Teviot Place, Edinburgh EH8 9AG I am the Chairman of the Primary Care Interest Group of the European Academy of Allergy and Clinical Allergy.
REVIEW RETURNED	10-Nov-2016

GENERAL COMMENTS	Thank you for the opportunity to review this much improved paper. I have a few further comments of minor revisions which need to be made, but this should not require further formal review. Page 4 line 31 “western hemisphere (1) and there has been a steady increase in the prevalence, severity and complexity” overuse of the word and. With a steady increase….. would be better.There is overuse of the word "and" throughout the text. Page 6 line 21“whereas in Australia and the USA, specialist services face the bulk of allergy care (8). Allergy service” They provide the bulk of allergy care, not face it. Page 7 line 11 Most of the articles were descriptive and hence, as is common in reviews of very heterogeneous studies which aim to describe and scope the area of interest, the analysis followed a narrative synthesis(34). The words need to be re ordered Most of the articles were descriptive hence the analysis followed a narrative synthesis as is common in reviews of very heterogeneous studies which aim to describe and scope the area of interest. Page 7 line 31 Twenty seven publications were included in the final review which are summarised in Table substitute which for "and these" Page 8 line 8 reports discuss all aspects of service delivery (Table 1). 3 Three studies discussed the use of digital technology Page 8 line 39: In public funded health systems such as the UK

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	where PCPs serve as gatekeepers to secondary care, This is a common misunderstanding. Gatekeeper is a “management term” it negates the effective role of GPs who refer fewer than 10% of all their contacts: Their primary role is as therapist managing disease in the community. Page 9 line 51 They (can) could help Page 9 line 55 suggested that all pharmacists be formally trained in allergy to that ensure high quality advice is provided to all patients(18) This sentence is missing some words, but I do not know which ones! Page 12 line 4 many experts feel that allergyservices remain: space between allergy and services Page 14 line 12 They suggest that increased initial outlay into well planned allergy services can reduce the cost and burden of allergic disease in the future (32). The results of this experiment are currently awaited. Note: The suggestion was of knowledge and skills training as well as planning allergy services but also suggested (and employed) a public health approach.

REVIEWER	Dr Laura Bonnett University of Liverpool, United Kingdom
REVIEW RETURNED	18-Nov-2016

GENERAL COMMENTS	The authors have clearly taken on board the comments made by all reviewers, and I am pleased to see a much more balanced, objective systematic review as a result of the changes. There are still a two minor outstanding issues in my opinion. Abstract - The results section does not demonstrate the same balance that the rest of the manuscript now shows. Please re-write this section in a balanced way e.g. instead of "primary care practitioners are not adequately trained in allergy", think about a statement such as "Results from studies included in this review suggest that primary care practitioners are not adequately trained in allergy." We need to see a summary of the published articles, not what comes across as an opinion. Figure 1 - The number of records excluded should total 36 rather than 34 (8+10+10+8 = 36) Otherwise, please double check all text to ensure a balanced article which objectively reports the work of others instead of anything that could be considered as an opinion. You have done really well to substantially improve this, but a final check would be beneficial.

VERSION 2 – AUTHOR RESPONSE

We thank the reviewers for their comments. The comments and changes are shown below:

Reviewer 2:

1. Page 4 line 31 “western hemisphere (1) and there has been a steady increase in the prevalence, severity and complexity” overuse of the word and. With a steady increase….. would be better.There is

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overuse of the word "and" throughout the text.

2. Page 6 line 21“whereas in Australia and the USA, specialist services face the bulk of allergy care (8). Allergy service” They provide the bulk of allergy care, not face it.

3. Page 7 line 11 Most of the articles were descriptive and hence, as is common in reviews of very heterogeneous studies which aim to describe and scope the area of interest, the analysis followed a narrative synthesis(34).
The words need to be re ordered Most of the articles were descriptive hence the analysis followed a narrative synthesis as is common in reviews of very heterogeneous studies which aim to describe and scope the area of interest.
4. Page 7 line 31 Twenty seven publications were included in the final review which are summarised in Table substitute which for "and these"
5. Page 8 line 8 reports discuss all aspects of service delivery (Table 1). 3 Three studies discussed the use of digital technology
6. Page 9 line 51 They (can) could help
7. Page 12 line 4 many experts feel that allergyservices remain: space between allergy and services

THANK YOU FOR THESE COMMENTS. WE HAVE MADE THE CHANGES RECOMMENDED

8. Page 8 line 39: In public funded health systems such as the UK where PCPs serve as gatekeepers to secondary care, This is a common misunderstanding. Gatekeeper is a “management term” it negates the effective role of GPs who refer fewer than 10% of all their contacts: Their primary role is as therapist managing disease in the community.

THANK YOU- THIS IS A FAIR COMMENT. WE HAVE NOW CHANGED THE STATEMENT TO “In public funded health systems such as the UK where PCPs assess and manage the majority of patients, the burden placed by allergy and related conditions on primary care could be significant.”

9. Page 9 line 55 suggested that all pharmacists be formally trained in allergy to that ensure high quality advice is provided to all patients(18) This sentence is missing some words, but I do not know which ones!

WE HAVE NOW MODIFIED THIS STATEMENT TO READ “The House of Lords committee suggested that pharmacists should be formally trained in allergy to ensure that good quality advice on allergy medication can be provided to all patients”

10. Page 14 line 12 They suggest that increased initial outlay into well planned allergy services can reduce the cost and burden of allergic disease in the future (32). The results of this experiment are currently awaited. Note: The suggestion was of knowledge and skills training as well as planning allergy services but also suggested (and employed) a public health approach.

THANK YOU FOR THE COMMENT.THE STATEMENT NOW READS “They suggest that increased initial outlay aimed at preventing allergies and changing attitudes towards health alongside improving service delivery can reduce the cost and burden of allergic disease in the future”

Reviewer 3:
Please leave your comments for the authors below

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The authors have clearly taken on board the comments made by all reviewers, and I am pleased to see a much more balanced, objective systematic review as a result of the changes. There are still a two minor outstanding issues in my opinion.

Abstract - The results section does not demonstrate the same balance that the rest of the manuscript now shows. Please re-write this section in a balanced way e.g. instead of "primary care practitioners are not adequately trained in allergy", think about a statement such as "Results from studies included in this review suggest that primary care practitioners are not adequately trained in allergy." We need to see a summary of the published articles, not what comes across as an opinion.
THANK YOU FOR THIS COMMENT. WE HAVE ALTERED THE ABSTRACT (THE RESULTS AND CONCLUSION SECTIONS) TO ENSURE IT REFLECTS THE LITERATURE AND NOT OUR OPINION.

Figure 1 - The number of records excluded should total 36 rather than 34 (8+10+10+8 = 36)

WE APOLOGISE FOR THIS OVERSIGHT. THE NUMBER HAS BEEN CHECKED AND CORRECTED

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