Determination of required knowledge and skills for primary care of allergy patients.

Joanna Wallengren, MD, PhD
Department of Clinical Sciences, Section of Dermatology,
Lund University, University Hospital, Lund, Sweden

Short title: Competencies in allergy for primary care settings

Key words: asthma, food allergy, immunologic tests, prevention, urticaria

Word count: 2694

Address:
Joanna Wallengren, MD, PhD
Department of Dermatology, Lund University
University Hospital
SE-221 85 Lund
Sweden
Joanna.Wallengren@derm.lu.se
Tel: +46 46 173152
Fax: +46 46 173947
Abstract

**Background:** Allergic diseases are common and have high impact on the patient’s quality of life. The majority of patients with allergy who seek medical advice are seen in primary care.

**Aim:** To identify core competencies for good practice amongst primary care providers with respect to diagnosis and therapy of allergic diseases and to outline learning objectives for a post-graduate training programme in this field.

**Method:** Three questionnaires were developed for the study, involving a total of 43 expert panellists. In the first round, a panel of physicians and nurses from primary care, adult and paediatric allergologists, dermatologists, otolaryngologists and a clinical immunologist were asked to indicate competencies necessary for primary care providers. The suggestions were compiled into four domains – knowledge, diagnostics, therapy and communication. The second and third questionnaires were answered by primary care physicians (12 and 14 respectively) and nurses (7 and 5 respectively). A Likert scale 1-4 was applied in the second questionnaire and two choices (“agree” / “disagree”) in the third round. A criterion of 75% was adopted.

**Results:** The second questionnaire consisted of 80 competencies and the third of 50 competencies. The third round selected a consensus of 46 competencies. Nine learning outcomes were defined for a continuing medical education in allergy for primary care settings.

**Conclusions:** The competencies may constitute a reference for primary care of allergy patients while the learning outcomes can be used as an overview of the curriculum.
Introduction

Asthma, urticaria, atopic dermatitis, and allergic rhinitis are common diseases that impact the patient’s quality of life and need for training and support. The majority of patients who seek medical advice are seen in primary care. Continuity of care is often easier to provide in general practice, which increases the compliance and safety of the patients. Primary care has also been shown to be more cost-effective compared to hospital care (1).

Numerous guidelines have been established for different diseases like asthma, anaphylaxis urticaria, atopic dermatitis, and rhinitis (2, 3, 4, 5, 6). The value of the guidelines is mainly dependent on how the recommendation can be implemented into daily clinical practice. As the majority of patients are seen by general practitioners, there is a great diversity in knowledge and tools for the management of this patient group in different primary care settings (2). Therefore it is important to establish what healthcare professionals are able to do, and what the public can expect. The competencies in primary care necessary for the management of the allergy patient merit an evaluation or guidelines of its own.

Guidelines for primary care providers may differ between different countries, depending on the structure of the health services, the number of specialists, their distribution, and distance the patient has to travel to secondary and primary care settings respectively. Competencies in primary care necessary for the management of allergy patients may be evaluated by different means. The most common approach is brainstorming or nominal group technique – structured face-to-face consensus meeting of specialists and general practitioners. A disadvantage of meetings is that some panel members can be inhibited by stronger individuals who dominate the group. Another approach for reaching consensus is a voting system at larger meetings (4). The statements on which voting is carried out are prepared by the panel members but consensus is based on the vote. A pitfall here may be that the participants, although interested in the subject, do not always have extensive experience unless there are special criteria for voting.

Another approach for reaching consensus is the Delphi technique where the expert opinions are collected independently and anonymously using a postal system or e-mail (7).
In this procedure, experts are invited to suggest competencies, without being aware of the identity of the other respondents. The suggestions are incorporated into a questionnaire that is sent to the panel participants who then complete the questionnaire anonymously in several rounds. As a part of the process, the responses are fed back in summarised form to the participants and the number of competencies is successively cut down by omitting statements that gained less than 25% until consensus is reached. The Delphi technique has been employed for determining training needs and curriculum content at various medical undergraduate programmes as well as in-service professional training and health research (8, 9, 10, 11).

The aim of this study was to identify core competencies for good practice for primary care providers and to outline the objectives of a post-graduate training programme in this field.

**Material and methods**

*Selection of panel members*

The panel, recruited from the whole of Sweden, was invited to suggest what they considered important competencies in the primary care setting for investigation and treatment of allergy patients. Specialists in allergology (3), clinical immunology (3), dermatology (3), otolaryngology (3) and paediatric allergy (3) who are often engaged in consensus meetings were contacted by e-mail. The inclusion criteria for general practitioners with special interest in allergy (15) and primary care nurses with special expertise in asthma/ COPD (5) were professional experience exceeding five years and participation in educational programmes in the field of allergy. The final rating of the competencies was left to the doctors (39) and nurses (8) from primary care with special interest in allergy.

Normally, the Delphi technique employs the same panel in all rounds of the investigation. The reason why specialists were asked to define the competencies in the first round is that it is usually specialists who write guidelines and may have expectations about what can be done in primary care. However, only the professionals actually involved in primary care can see the reality for allergy patients among other patients treated at the unit. Therefore, the questionnaires in the second and third rounds were sent to general practitioners and nurses.
Tools

The Delphi technique was carried out in three rounds. The aim of the first round was to list the competencies for good practice for primary care providers with respect to the diagnosis and therapy of allergic diseases. The first round took place in November and December 2008. It was considered important to let the panel experts express in their own words what they considered essential competencies. The invitation was sent to 15 general practitioners, 5 asthma/ COPD nurses and 15 specialists.

All suggestions were categorised into four domains: knowledge, diagnostics, therapy and communication. Only repeated statements were omitted, and the rest were incorporated into a questionnaire of 80 items. This questionnaire was sent to the general practitioners and nurses in the second round in December 2008 and January 2009, with one reminder sent. The questionnaires were returned mainly by mail and were anonymous, although profession, number of years in the profession, number of hours spent with allergy patients a week and the gender of the respondent were stated. This questionnaire consisted of statements to be evaluated using a Likert scale 1-4: 1- not necessary, 2- desirable, 3- important, 4-necessary. Only statements scoring 3.25 points or more were incorporated into the next questionnaire, which was sent in the third round between January and February 2009. This questionnaire was addressed to the same panel and to a further seven general practitioners, but no reminder was sent. In the third round, the questionnaire was quantitative – the listed statements were to be answered by: “agree” / “disagree”. Responses of “do not know” were regarded as disagreement. An overview of the complete process in this study is shown in Fig 1.

Data analysis

In the first questionnaire a mean score was calculated for all competencies listed. A minimum of 3.25 of the Likert scale was mandatory in order to qualify for inclusion in the second questionnaire in the third round. In the final round an agreement of 75% of the panel answers was necessary for inclusion of a competency in the final list, which was then regarded as consensus.
**Formulating the objectives of a training programme**

A synthesis of core competencies was used to specify the objectives of a training course to obtain the desired skills. In the present study, expected learning outcomes have been used to define the objectives for an educational programme (12). The list of outcomes was supposed to serve as a framework for the organization of learning resources and to be used as an overview of the curriculum.

**Results**

A total of 35 individuals from 12 regions in Sweden (out of 21) answered the questionnaires (Fig 2). The place of work of one participant could not be traced.

**The first round of the investigation**

Fifteen experts participated in listing the competencies: five general practitioners with special interest in allergy, one nurse with special expertise in asthma/COPD, three allergologists, one clinical immunologist, two dermatologists, two otolaryngologists and one paediatrician. One reminder e-mail was sent, and the response rate was 43%. The panel group came up with 80 different statements that were then categorised into four domains: knowledge (35), diagnostics (17), treatment (12) and communication (15). A few competencies occurred in more than one domain.

**The second round of the investigation**

The first questionnaire was sent to 32 participants and was answered by twelve general practitioners (7 male, 5 female) and five nurses (all female) with special expertise in asthma/COPD. One reminder e-mail was sent and the response rate was 59%. The doctors worked approximately 1.3 hours a week (range 0.5-2 hours) with allergy patients and their mean professional experience was 17 years (range 6-28 y). The nurses worked approximately 7 hours a week (range 5-12 hours) with allergy patients and their mean professional experience was 15 years (range 7-20 y).

Thirty statements scored less than 3.25 and were excluded from the third round. These competencies are summarised in Table 1.
Fifty statements scored 3.25 or higher and were included in the third round of the study. These statements are listed below (Table 2).

Table 1. Summary and priority of the competencies in the second round that did not qualify for the third round.

<table>
<thead>
<tr>
<th>No</th>
<th>Statements with scores 2.3-2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Principles of elimination diets</td>
</tr>
<tr>
<td>2</td>
<td>Understanding of the difficulties in interpreting IgE and prick test reactions in children</td>
</tr>
<tr>
<td>3</td>
<td>Investigation of latex allergy</td>
</tr>
<tr>
<td>4</td>
<td>Occupational contact allergy</td>
</tr>
<tr>
<td></td>
<td>Statements with scores 2.6-2.8</td>
</tr>
<tr>
<td>5</td>
<td>The significance of specific IgE for the clinical symptoms of allergy</td>
</tr>
<tr>
<td>6</td>
<td>Occupational asthma and rhinitis</td>
</tr>
<tr>
<td>7</td>
<td>Occupational risks facing atopics</td>
</tr>
<tr>
<td>8</td>
<td>Different types of endogenous eczema</td>
</tr>
<tr>
<td>9</td>
<td>Mechanisms of pruritus</td>
</tr>
<tr>
<td>10</td>
<td>Indications for ASIT</td>
</tr>
<tr>
<td>11</td>
<td>Mechanisms of anosmi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Statements with scores 2.9-3.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Understanding terms like sensibilisation, atopy, type I and type IV allergy</td>
</tr>
<tr>
<td>13</td>
<td>Indication for and interpretation of specific IgE</td>
</tr>
<tr>
<td>14</td>
<td>Common food allergens in children and adults, hidden allergens</td>
</tr>
<tr>
<td>15</td>
<td>Indications for adrenaline autoinjector in children</td>
</tr>
<tr>
<td>16</td>
<td>Investigation of urticaria and pruritus</td>
</tr>
<tr>
<td>17</td>
<td>Trigger factors of chronic urticaria and eczema in children and adults</td>
</tr>
<tr>
<td>18</td>
<td>Signs of contact eczema and indications for patch test</td>
</tr>
<tr>
<td>19</td>
<td>Nurse with academic education in asthma at the unit</td>
</tr>
</tbody>
</table>

The third round of the investigation

The second questionnaire was sent to the 32 original participants from primary care and to a further seven general practitioners with special interest in allergy. This questionnaire was answered by 14 doctors (8 males, 6 females) and five nurses (one male, four female). No reminder letter was sent and the response rate was 48%.
The doctors worked approximately 2.4 hours a week (range 1-6 hours) with allergy patients and their mean professional experience was 15 years (range 5-23 y). The nurses worked approximately 6.2 hours a week (range 2-12 hours) with allergy patients and their mean professional experience was 16 years (range 8-24 y). Only three experts participated in both questionnaires.

In the third round, only one statement (trigger factors of angioedema) was regarded as unnecessary by 25% of the respondents. All other competencies reached consensus. These competencies within the four domains are shown in Table 2.

Table 2. The consensus for the core competencies for primary care of allergy patients.

Agreement is expressed in percent.

<table>
<thead>
<tr>
<th>No</th>
<th>Knowledge</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manifestations of allergy to pollen, mites and pets</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Cross reactions to birch and mugwort, oral allergic syndrome</td>
<td>79</td>
</tr>
<tr>
<td>3</td>
<td>Lactose intolerance</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Trigger factors of acute urticaria /angioedema</td>
<td>95</td>
</tr>
<tr>
<td>5</td>
<td>Definition of anaphylaxis</td>
<td>95</td>
</tr>
<tr>
<td>6</td>
<td>Anaphylaxis from food, bee/wasp and drugs</td>
<td>95</td>
</tr>
<tr>
<td>7</td>
<td>Indications for prescription of adrenaline autoinjector</td>
<td>95</td>
</tr>
<tr>
<td>8</td>
<td>Intolerance vs allergy</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>What is included in different panels of allergens</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>Basic mechanisms of infectious asthma and COPD</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>Basic mechanisms of allergic and non-allergic rhinitis and organic disorders in the nose and sinus</td>
<td>95</td>
</tr>
<tr>
<td>12</td>
<td>Acute and chronic infectious disorders in the nose and sinus</td>
<td>95</td>
</tr>
<tr>
<td>13</td>
<td>Mechanisms of urticaria</td>
<td>90</td>
</tr>
<tr>
<td>14</td>
<td>Drug reactions: immediate and delayed</td>
<td>90</td>
</tr>
<tr>
<td>15</td>
<td>Basic mechanisms of common drugs for inflammatory disorders in airways and in skin</td>
<td>84</td>
</tr>
<tr>
<td>16</td>
<td>Different pharmacological treatment options (including the ones prescribed by specialists)</td>
<td>84</td>
</tr>
<tr>
<td>17</td>
<td>When to consider referral to a specialist</td>
<td>100</td>
</tr>
<tr>
<td>18</td>
<td>Not to advise avoidance of food due to occurrence of specific IgE in children without referral to a paediatric department</td>
<td>84</td>
</tr>
<tr>
<td>No</td>
<td><strong>Diagnostics</strong></td>
<td>Agree</td>
</tr>
<tr>
<td>----</td>
<td>----------------</td>
<td>-------</td>
</tr>
<tr>
<td>19</td>
<td>History, including seasonal allergies, cross-allergies; best with a questionnaire</td>
<td>100</td>
</tr>
<tr>
<td>20</td>
<td>Examination of eyes, nose and skin</td>
<td>100</td>
</tr>
<tr>
<td>21</td>
<td>Pulmonary auscultation</td>
<td>100</td>
</tr>
<tr>
<td>22</td>
<td>Basic investigation of obstructive pulmonary disease</td>
<td>100</td>
</tr>
<tr>
<td>23</td>
<td>Basic investigation of rhinitis</td>
<td>100</td>
</tr>
<tr>
<td>24</td>
<td>Basic investigation of type 1 and type 2 allergy</td>
<td>84</td>
</tr>
<tr>
<td>25</td>
<td>Indications of specific IgE</td>
<td>100</td>
</tr>
<tr>
<td>26</td>
<td>Reading of spirometry and PEF curve</td>
<td>100</td>
</tr>
<tr>
<td>27</td>
<td>Performing spirometry</td>
<td>79</td>
</tr>
<tr>
<td>28</td>
<td>Recognition of signs of contact allergy and referral to a dermatologist</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th><strong>Therapeutics</strong></th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Treatment of allergic rhinoconjunctivitis (antihistamine, nasal corticosteroid and eye drops)</td>
<td>100</td>
</tr>
<tr>
<td>30</td>
<td>Treatment of non-allergic disorders such as idiopathic or vasomotor rhinitis</td>
<td>100</td>
</tr>
<tr>
<td>31</td>
<td>Treatment and prevention of allergic acute asthma</td>
<td>100</td>
</tr>
<tr>
<td>32</td>
<td>Treatment of allergic acute asthma in children</td>
<td>90</td>
</tr>
<tr>
<td>33</td>
<td>Dealing with an acute severe allergic reaction</td>
<td>100</td>
</tr>
<tr>
<td>34</td>
<td>Treatment of anaphylaxis</td>
<td>100</td>
</tr>
<tr>
<td>35</td>
<td>Treatment of atopic eczema; moisturisers, topical steroids with adequate potency and avoidance of systemic steroids</td>
<td>100</td>
</tr>
<tr>
<td>36</td>
<td>Treatment of urticaria with non-sedating antihistamines</td>
<td>100</td>
</tr>
<tr>
<td>37</td>
<td>Treatment of itch</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th><strong>Communication</strong></th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Offering sufficient time to examine history</td>
<td>100</td>
</tr>
<tr>
<td>39</td>
<td>Showing interest, commitment and empathy</td>
<td>100</td>
</tr>
<tr>
<td>40</td>
<td>Writing careful referral for specific IgE</td>
<td>90</td>
</tr>
<tr>
<td>41</td>
<td>Explaining to the patient in a simple way what allergy is and its consequences</td>
<td>100</td>
</tr>
<tr>
<td>42</td>
<td>Giving basic advice about treatment of eczema and rhinoconjunctivitis</td>
<td>100</td>
</tr>
<tr>
<td>43</td>
<td>Instructing the patient how to use adrenaline autoinjector</td>
<td>79</td>
</tr>
<tr>
<td>44</td>
<td>Attending training courses as a team (doctor and nurse) to ensure patient receives consistent information</td>
<td>90</td>
</tr>
<tr>
<td>45</td>
<td>Cooperating with colleagues and other staff categories</td>
<td>100</td>
</tr>
<tr>
<td>46</td>
<td>Establishing regular cooperation with a specialist at the hospital</td>
<td>84</td>
</tr>
</tbody>
</table>
Specification of learning outcomes

Totally nine expected learning outcomes have been extracted from the list of desired competencies (Table 3). The list indicates a desire for a holistic approach; not only examination and investigation of the patient but also understanding and communication of environmental risk factors as well as involvement and cooperation of different professionals in the care of the patient.

Table 3. Learning outcomes for a continuing medical education in allergy for primary care settings.

<table>
<thead>
<tr>
<th>No</th>
<th>After the course the participants will be able to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Explain the mechanisms and manifestations of atopy, allergy, intolerance and autoimmunity and interpret the laboratory data</td>
</tr>
<tr>
<td>2</td>
<td>Examine the patient and investigate, treat and control asthma</td>
</tr>
<tr>
<td>3</td>
<td>Investigate and treat allergic and non-allergic reactions to food and drugs with special reference to principles for provocation</td>
</tr>
<tr>
<td>4</td>
<td>Diagnose and treat anaphylaxis</td>
</tr>
<tr>
<td>5</td>
<td>Investigate and treat allergic and non-allergic rhinitis and rhinoconjunctivitis</td>
</tr>
<tr>
<td>6</td>
<td>Investigate and treat different forms of urticaria and eczema with special reference to allergic and non-allergic mechanisms</td>
</tr>
<tr>
<td>7</td>
<td>Communicate with the patients about the risk factors, prevention strategies and treatment options with respect to the status</td>
</tr>
<tr>
<td>8</td>
<td>Identify criteria for referral to specialists, with special reference to pediatricians</td>
</tr>
<tr>
<td>9</td>
<td>Organize a team for continuing promotion of innovations in the care of allergy patients</td>
</tr>
</tbody>
</table>

Discussion

In the first round of the present study the panel members were confronted with an open question: “What competencies in a primary care setting are desired for management of allergy patients?” This brought a great number of responses that, after categorisation, could be reduced to 80. Many respondents answered instantly while others notified regret that they could not participate due to their workload. Normally, the second and third rounds of a Delphi study are answered by the same panel (7). Successive rounds of information are supposed to
encourage the panel to reconsider some of their original opinions. In the present study no specialists were asked to participate in the second and third rounds of this study as they were assumed to have insufficient knowledge about the facilities of primary care units. According to a questionnaire in 2000, 42% of the primary care units in the county of Stockholm employed general practitioners with special interest in asthma, and 58% employed asthma and COPD nurses (Kihlström A, personal communication).

In the present study, only 6 of 19 participants in the second round had participated in the first round. This was partly due to the change of focus group as the specialists were excluded from the second round. Thirty-two experts from primary care received questionnaires from the second and third rounds, but only three participated in both. The partly different populations of the panel members in all three rounds disqualifies this study from being a pure Delphi study and highlights the main difficulty of this technique, namely the response rate. In the present study, the response rates in the second and third rounds were 59% and 48% respectively (13). Although some respondents were very enthusiastic about the project, especially those who accepted the invitation to the first round, some admitted that they lacked time to participate in projects like this. Probably the response rate could be increased if reminder letters were sent to non-responders (13). However, this anonymous way of collecting answers made it impossible to know who had actually responded.

The anonymous answers in the second and third rounds may guarantee honest opinions. The structure of primary care, the distance to the nearest hospital, regional guidelines and in-service professional training vary in different parts of Sweden. This consensus includes possible regional differences as the participants were recruited from most regions of Sweden. Normally in a Delphi study, the rounds should continue until all participants agree (7, 13). In the third round some competencies did not achieve full agreement. However, according to the Oxford Dictionary 1984, consensus is defined as “an agreement in opinion; a majority view” and so a criterion of 75% can be accepted.

According to this study, most patients with moderate symptoms of asthma, food allergy, rhinitis, urticaria and atopic eczema can be treated in primary care settings. A referral to a paediatrician was recommended for children with food allergy and occurrence of specific IgE.
The general practitioner with special interest in asthma and allergy is responsible for diagnosis, treatment and follow up. A very important task is maintaining continuity and education of the patients on allergy sanitation. The doctor and the nurse normally share this task and it was suggested that both should participate in the same in-service professional training in order to ensure that consistent information is given to patients. One of the competencies suggested in the first round that did not make it to the third was academic education of nurses. In this study, all participating nurses had at least ten weeks of university education in the field of asthma and COPD. It may be expected that such education may result in better information to patients. Successful training of patients gives better understanding, compliance and safety, and results in fewer visits and admission to hospital (1). Local knowledge of the environment at primary care units may also contribute to identifying important risk factors. Allergy-prevention programmes have been shown to reduce the prevalence of atopic symptoms in infancy (14).

Asthma and allergy nurses are normally responsible for spirometry and allergy testing. Prick tests are performed at some primary care units, and this is especially important where the secondary care institution is far away. A common view is, however, that frequent prick testing is required to maintain the high standard of the procedure, which is why many primary care providers do not perform it.

Spirometry is often performed in primary care units (15). A “spirometry licensure,” central education of key nurses at the primary care units, is now under discussion in Sweden in order to guarantee standard quality throughout the country. A primary care unit that treats children should have the competency to perform spirometry and interpret its results in this group according to the present survey.

Increasing demands for quality assurance can in the future require a licensure for primary care providers to treat allergic diseases. A synthesis of core competencies has been used to define the objectives of a training course to obtain the desired skills. In the present study, expected learning outcomes have been used to define the objectives for an educational programme (12, 15). Description of the objectives of a course as learning outcomes gives a hint what is
expected of the participants. The assessment of educational outcomes can be easily linked to the objectives and learning activities in order to obtain constructive alignment throughout the course (17). The examination of primary care providers can also be used as a quality assurance of the primary care unit.

The programme may be organized as a trans-professional course for physicians and nurses and include several practical moments. The importance of teamwork stressed by the panel suggests a collaborative approach. Interprofessional education, defined as “occasions when members (or students) of two or more professions learn with, from and about one another to improve collaboration and the quality of care,” has gained increasing interest (18). Such a coordinated educational programme for primary care providers in the field of allergy may involve allergologists, clinical immunologists, dermatologists, otolaryngologists and paediatricians. It may constitute a good platform for better communication within the team of care providers promoting a better care of the patients.

Conclusion

Increasing demands for quality assurance can in the future require an accreditation for primary care providers to treat allergic diseases. The present study has resulted in 46 core competencies for primary care of allergy patients, which may be used as a reference for what can be expected from primary care providers. Teamwork of different professionals, stressed by the panel, may be improved by introducing an inter-professional collaborative education.

Acknowledgements

The panel members are gratefully acknowledged. Thanks to Tommy Höögh and his colleagues for recruiting the experts from primary care, and to Assoc. Prof. Gudrun Edgren for suggesting the design of this study and for helpful comments. The study was supported by The Asthma and Allergy Foundation.
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**Legends.**

Fig 1. Schematic description of the process in this study.

Fig 2. The numbers of panel participants from the regions involved are indicated on the map.

<table>
<thead>
<tr>
<th>Panel</th>
<th>Investigator</th>
</tr>
</thead>
</table>
Figure 1.

Suggestions for competencies

Open question to the pilot group:
What competencies are necessary for primary care of allergy patients

Categorization of the answers
Construction of the first questionnaire

Assessment of the first questionnaire

Statistical analysis of the first questionnaire
Construction of the second questionnaire

Assessment of the second questionnaire

Statistical analysis of the second questionnaire
Suggestions for core competencies
Figure 2.
Dear prof Bousquet,

Please consider the enclosed manuscript entitled “Determination of required knowledge and skills for primary care of allergy patients.” It depicts core competencies in primary care professionals who investigate and treat allergy patients. In addition it suggests learning outcomes of an inter-professional education. This article should be of interest for the readers of Allergy that has published several guidelines on treatment of several allergic diseases like asthma and urticaria. The adherence to guidelines is partly dependent on the quality of primary care. In Sweden the number of allergologists is diminishing as many retire now and there are not specialists in Allergy enough to take their place. The conditions in our country may be of interest for the professionals in other countries of the European Union as migration and exchange is encouraged and increasing. Maybe these questions could be discussed in an editorial?

With kind regards

Joanna Wallengren, MD, PhD

Associated professor of Dermatology