Method

Searching for evidence. Based on the previous (complete) edition of GEMA[2] published in 2015, and following the recommendations for Updating Clinical Practice Guidelines of the National Health System[3], members of the Executive Committee performed a systematic search of the literature, with assessment and selection of publications on asthma published from 2015 to 2020 (Pro-GEMA Project). After reviewing high impact journals of Pneumology, Allergology, Pediatrics, Primary Care, Internal Medicine and Otorhinolaryngology, which were also classified into the two first quartiles of their specialty field, a total of **120** documents were selected (abstracts available at http://www.progema-gemasthma.com/foco.html) that were considered of interest for updating this guideline. All these documents were provided to the editors for evaluation. Also, they were encouraged to perform bibliographic searches of specific topics by their own. To this purpose, the procedure usually established to develop clinical practice guidelines was followed[4]. Also, the reference lists of the main international practice guidelines[5,6] were reviewed in order to identify the most relevant systematic reviews and clinical trials. These guidelines were searched in specialized databases (*National Guideline Clearinghouse, National Library of Guidelines*) and the TRIP medical literature meta-search engine database. Databases from the *Centre for Reviews and Dissemination* (DARE and HTA database) and *The Cochrane Library* were searched to identify additional systematic reviews and technological evaluations. The search was completed with an update of the systematic reviews since the date of the original search and of relevant studies included in the main electronic databases of original studies (*MEDLINE, CENTRAL and EMBASE*).

Classification of the evidence. To assess the quality of evidence, an alphabetic classification was used (Table 0.1) that classifies the information into four categories (A, B, C, D) and represents a gradient of confidence in the results obtained in the available studies. Category A would correspond to a high quality evidence and D to a very low quality. For category A, confidence in the results is high and the potential modification of available findings by further studies is unlikely. By contrast, for lower categories, C or D, confidence will be low or very low, and there is a high probability that further studies will modify the results, or even the direction of the effect. However, it should be remember that this system is very useful to categorize the evidence regarding therapeutic efficacy of drugs or other therapeutic actions, but the effect of other interventions may be underestimated. This can explain why evidence from studies aimed at determining the appropriateness of some diagnostic procedures had often been assigned a level of evidence C.

Taking into account the recent emergence of new approaches used to classify the quality of evidence based on aspects other than the study design[7,8], some of the characteristics of the GRADE[9] framework were used, although the GRADE system was not applied in full.

Classification of recommendations. To classify the relevance and consistency of clinical recommendations, the same method used in the previous editions of GEMA was followed, in which recommendations are categorized into two levels: robust recommendations (R1), that is, those considered by the guidelines making group to be associated with more benefits than risks; and weak recommendations (R2), that is, those in which some uncertainty exists as to whether its application might entail more benefits than risks. To perform this distribution in R1 o R2, the quality of information was weighed (based on the aforementioned classification), the balance between risks and benefits of interventions, the costs (according to the available specialized literature), and the patients' values and preferences (through the participation of FENAER members).

Table 0.1. Classification of the quality of evidence

Category of the evidence	
A	SR of RCTs with or without MA; and RCTs with low risk of bias. Evidence based on a substantial number of well-designed studies with consistent results.
B	SR of RCTs with or without MA; and RCTs with moderate risk of bias. Evidence obtained from a limited number of studies and/or inconsistent results.
C	Evidence based on non-randomized, observational or non-controlled studies.
D	Clinical experience or scientific literatura that cannot be included in category C.

Abbreviations: SR: systematic reviews; RCT: randomised controlled trials; MA: meta-analysis.

The categorization of the recommendation level was established by consensus, firstly by the editors (see below for the working method used) and finally by agreement with the reviewers (through the Delphi method), whose opinions were binding for the final version of all recommendations.

Drafting and consensus of the text and recommendations. The development of the writing task was based on a pyramidal consensus system, from an initial consensus among the authors of each chapter to a large final consensus among all editors and reviewers. Based on the document of the previous edition and the new bibliographic references on asthma published between 2015 and 2020, a group of editors and coordinators made up by experts from the participating scientific societies drew up the new chapter sections they were assigned (including the classification of evidence and recommendations). The editors submitted their texts to each chapter coordinators who were members of the GEMA Executive Committee. After unifying and reviewing the texts, the chapter coordinator submitted the draft to the editors of each chapter in order to reach the first partial consensus. After implementation of changes, all chapters were brought together in one single document which, in turn, was sent to all editors and coordinators for telematic discussion (and for face-to-face discussion, when necessary) and approval. The resulting document was submitted to experts in the methodology of clinical practice guidelines from the INPECS (*Instituto para la Excelencia Clínica y Sanitaria* [Institute for Clinical and Healthcare Excellence]), who made a critical review of the methodology and writing of both the text and the recommendations. Finally, after these modifications and improvements, recommendations were reviewed and agreed on (through the Delphi method) by a group of experts in asthma from the participating societies. Recommendations not achieving a certain consensus level were removed from the final document.