Deliverable 6.2 – Database of evidence profiles

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1. Introduction

The DECIDE project, which started on the 1st of January 2011, aims to build on the work of the GRADE Working Group (www.gradeworkinggroup.org) by developing and evaluating ways of effectively communicating and supporting the uptake of evidence-based recommendations about prevention, treatment and rehabilitation for different target groups. The project also develops strategies for recommendations about diagnostic tests and health system policies.

DECIDE is structured in five main investigational work packages (WPs), each aimed at a different target (stakeholder) group:

WP1: Healthcare professionals
WP2: Policymakers and managers
WP3: Public, patients and carers
WP4: Users of evidence on diagnostic tests
WP5: Users of evidence on health system policies

To achieve our objectives, each of these WPs is structured in three phases:

Phase 1: Strategy development
Phase 2: Evaluating of the strategies in randomised clinical trials
Phase 3: Testing the strategies with real guidelines

DECIDE's assessment of the effectiveness of communication strategies will provide an empirical, theoretically-informed basis for better understanding of the factors that influence the effectiveness of communication strategies on the various actors in healthcare.

The objective of WP6 is to develop a toolkit for preparing and disseminating evidence-based recommendations using the DECIDE strategies developed in WPs 1-5. **D6.2 is the development of a database of evidence profiles prepared using GRADEpro and the strategies developed by DECIDE, the aim of which is to facilitate collaboration across European guideline developers**.

This work builds on a pilot database developed by the GRADE Working Group. We have established an advisory group with representatives from producers of guidelines and systematic reviews to obtain input into key decisions, including quality control, inclusion of metadata, and access to the database.

The role of the advisory group has been to help ensure that the database is optimally designed to minimise unnecessary duplication of effort and to maximise access to evidence profiles by guideline developers and HTA agencies in Europe.

The profile database accommodates the changing and evolving nature of the grading methodology over time (such as empirical evidence from DECIDE). This makes storing static documents (such as pdf files of finished evidence profiles) less appealing. Instead, the database stores the individual data points, for example, effect sizes, and the evidence profile will be re-created on demand. This allows for the highest flexibility in providing different profile presentations that can be utilized for targeted user testing in randomized trials and allows creating different output formats, such as pdf files, rich text formats, or in graphical form.

In addition, the original data set can be downloaded at any time for reuse and for easy updating at a later time point or by other authors. GRADE profiles will be conceptually stored in three separate components: the profile identifiers (e.g., profile name), patient-important outcomes (including quality of evidence rating and estimate of effect), as well as annotations (footnotes, which provides the rational for the evidence rating and additional explanations). The system has been built utilizing an Elasticsearch server on the backend and React.js framework for the web frontend. Using this approach ensures desirable emergent properties, such as performance, scalability, modifiability, and reliability. IT has been tightly integrated with GRADEPro, which ensures easy uploading of profiles to the database.

2. Database of Evidence Profiles

The Database of Evidence Profiles (DBEP) is available at:
http://dbep.lab.evidenceprime.com/#/search

The primary objective of the DBEP is to facilitate collaboration across European guidelines developers. To this extent, the DBEP accepts input in a common data format. This allows interoperability between a variety of electronic tools used by European and international guideline developers.

The central and most basic data item used in the DBEP is an evidence profile, to which outcomes and recommendations are attached. The profiles are linked conceptually by the guideline they come from. It is also possible to upload separate evidence profiles to the database.

An ontology-based coding was implemented in order to tackle issues such as differences in terminology or languages used in different evidence syntheses and guidelines. The interface allows searching the database by ICD-10, SNOMED-CT and MESH codes, as well and plain language.

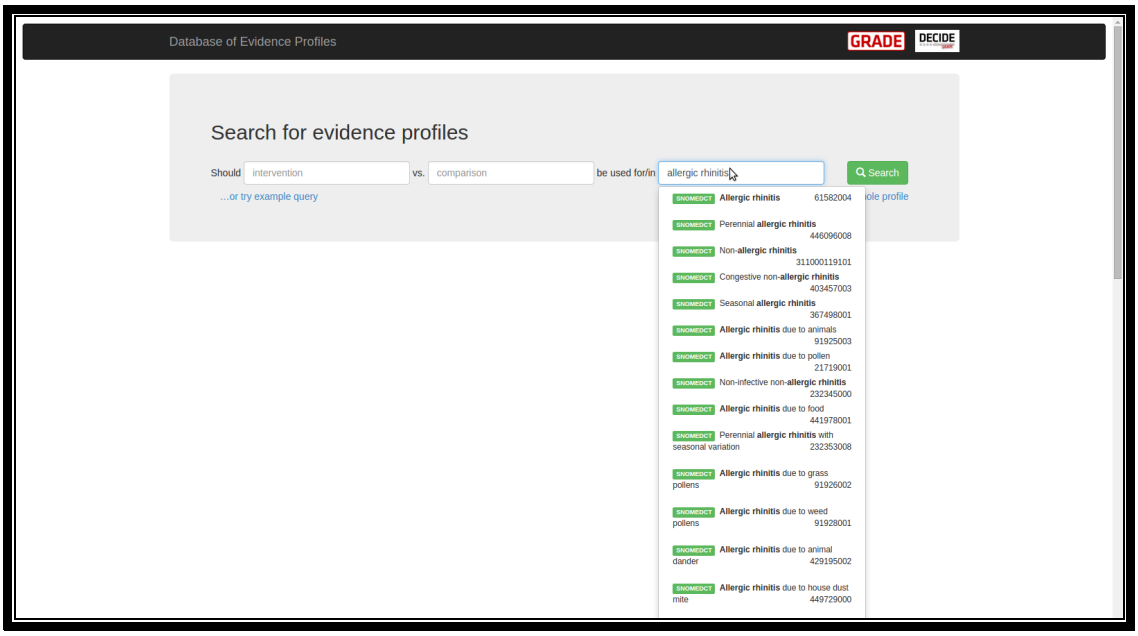
The content of the DBEP has been made machine consumable by the use of Linked Data paradigm. All the database records come in a structured format that follows Resource Description Framework format. Attaching codes enables this representation to be queried against external databases, such as DBpedia. For this purpose, a SPARQL endpoint will soon be provided.

The DBEP can also present guideline recommendation attached to the evidence profile (where available) in the form recommended by the DECIDE WP1.

Other presentations of the evidence from the DBEP are also available (e.g. GRADE evidence profile, Cochrane Collaboration Summary of Findings table) or will be available soon. An interactive Summary of Findings (iSoF) will also be available by the end of 2014.

Screenshots of the Database of Evidence Profiles (DBEP)

A. Search interface



B. Sample presentation of evidence tables in the format developed in WP1

C. Sample presentation of evidence profiles in the format developed for the Cochrane Collaboration

Database of Evidence Profiles

GRADE DECIDE

Itziar Etxeandia-Ikobaltzeta, Carlos Cuello, Juan José Yepes-Nuñez, Yuan Zhang, Jan Brozek, and Holger Schünemann

Should sublingual specific immunotherapy vs. no sublingual specific immunotherapy be used in adults with perenial/persistant allergic rhinitis?

Recommendation

The KSA MoH panel suggests sublingual immunotherapy for treatment of adults with seasonal or intermittent allergic rhinitis (conditional recommendation; Moderate-quality evidence).

Key info | Rationale | Practical advice | References

The evidence, with an overall moderate certainty, shows that the desirable effects probably are not large relative to undesirable effects. Furthermore, possibly there is an important variability about how much people value its effectiveness because there is a concern that some patients in KSA would not accept SLIT with some allergens of animal origin, however others would accept it as the last option when the symptoms do not decrease with all other regular options. On the other hand the incremental cost is not small relative to the net benefits, and the implementation would require personnel experts and resources (i.e. skin tests, specific allergen) which are not readily available in most areas. Reasons to formulate a conditional rather than a strong recommendation.   It is considered that the lack of adherence with the medication use is not related with its adverse effects but with the long duration of treatment. For this reason in the cases when the SLIT would be the treatment of choice clinicians should provide an adequate educational instruction to the patient.

GRADE evidence profile | Summary of Findings table

Open in new window

Summary of findings:

Sublingual specific immunotherapy compared to no sublingual specific immunotherapy in adults with perenial/persistant allergic rhinitis

Patient or population: adults with perenial/persistant allergic rhinitis
Settings:
Intervention: sublingual specific immunotherapy
Comparison: no sublingual specific immunotherapy

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	№ of participants (Studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	No sublingual specific immunotherapy	**Sublingual specific immunotherapy**				
Allergic rhinitis symptom scores (better indicated by lower scores) follow up: median 7 months	The mean allergic rhinitis symptom scores (better indicated by lower scores) in the control group was **0**	The mean allergic rhinitis symptom scores (better indicated by lower scores) in the intervention group was 0.38 standard deviations lower (0.49 lower to 0.27 lower) ⁵	not estimable	3476 (33 RCTs)	⨁⨁⨁◯ MODERATE ³ ⁴	
Ocular systems (better indicated by lower values) follow up: median 7 months	The mean ocular systems (better indicated by lower values) in the control group was **0**	The mean ocular systems (better indicated by lower values) in the intervention group was 0.26 standard deviations lower (0.06 lower to 0.46 lower)	not estimable	1213 (8 RCTs)	⨁⨁◯◯ LOW ¹ ² ⁵	
New outcome	**Study population**		not estimable	(Studies)		
	0 per 1000	**0 per 1000 (0 to 0)**				

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio; **OR:** Odds ratio;

3. Outlook for the DBEP

The DBEP has been launched and we consider project deliverable 6.2 (D6.2) to be complete. The development of the DBEP - and the GRADE Guideline Development Tool (G²DT) - will continue, incorporating new DECIDE results as they become available.

Specifically, our work will focus on adding functionality of DBEP and G²DT that will allow developing and presenting summaries of the evidence and recommendations based on information from diagnostic test accuracy studies, interactive versions of evidence profiles and presentation of the results from network meta-analyses that will result from other work packages.

Our work will also focus on developing associate modules that allows for the integration of all steps in the guideline development process. The output of these associate modules will include completed recommendations with associated background information and integration with implementation tools. We will also continue translating all presentation formats from other work packages into languages other than English as planned.

Database of Evidence Profiles (DBEP):
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