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# Evidence-Based Medicine and Clinical Practice: the first Italian attempt to define the appropriateness of rehabilitation admission criteria through the application of the Delphi method

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*Parole chiave: Riabilitazione, criteri d'ammissione, appropriatezza, metodo Delphi*

## Abstract

**Background.** One of the consequences of today's global economic crisis is the need to control healthcare spending, in particular by improving the level of appropriateness. Thus, admission to rehabilitation has become an issue, especially as regards inappropriateness of resource allocation. The scientific literature suggests that more attention should be paid to the problem of clinical appropriateness in order to better identify the patients' actual needs. For the first time in Italy, this study aims at defining the appropriateness of intensive rehabilitation admission criteria through use of the Delphi method involving a panel of national experts.

**Materials and Methods.** A three-round Delphi survey was conducted according to international guidelines. Electronic questionnaires were individually sent via e-mail to ensure the participants' anonymity throughout the process. Questions were mostly based on rehabilitation literature.

**Results.** During the Delphi process, a total of 79 items were submitted to a heterogenous panel of rehabilitation experts who were asked to express their level of agreement to the item contents on a five-point Likert scale. At the end of the survey, a list of 19 appropriate criteria for admission to intensive rehabilitation facilities and 21 reasons for inappropriateness was drawn up.

**Conclusions.** This study represents the first attempt in Italy to define shared and objective appropriateness criteria for admission to intensive rehabilitation. Out of the total number of experts invited to participate (31), only 16 completed the entire survey. This poor participation rate unfortunately demonstrates the lack of awareness among Italian rehabilitation professionals, which is a further sign of both the scarcity of scientific evidence in this area and the need to reach consensus on admission criteria.

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## Background

In Italy, as in the rest of the world, longer life expectancy and the availability of new and more effective drugs have led to an increase in the number of chronic patients predominantly treated in a hospital setting (1).

One of the consequences of today's global economic crisis is the need to control healthcare spending, in particular by improving the level of appropriateness. Thus, admission to rehabilitation has once again become an issue, especially as regards inappropriateness of resource allocation (2).

However, the scientific literature suggests that more attention should be paid to the problem of clinical appropriateness (3, 4). Trying to establish shared and objective rehabilitation admission criteria in order to admit patients in the most appropriate setting could result in greater efficiency.

The current goal of reducing hospital stays in acute care settings is causing a sharp increase in admissions to sub-acute care and rehabilitation units, since the transfer from an acute ward to a rehabilitation unit is a faster procedure than the transfer to home care following hospital discharge (5). This entails the risk of overusing rehabilitation wards and, consequently, the need to evaluate the appropriateness of hospitalizations through the use of shared criteria that are objective and consistent with the patients' actual needs, rather than vague or subjective, like those currently in use, which are often based on the consideration of aspects other than the anticipated discharge destination, stroke severity, staff expectations of the patient's recovery and family support to rehabilitation decision-making (5, 6).

The selection of patients for rehabilitation, whose needs vary greatly depending on their conditions, and the timing of transfer from acute care units are both important clinical decisions that affect the quality of care (7, 8).

The delivery of rehabilitation services is very different from one country to the next and clinical decision-making for admission to rehabilitation is essentially based on scale scores (7-13).

However, as it is clearly demonstrated by the international literature (7-13), currently there isn't any large validated set of criteria that might be used worldwide, because of the differences that exist not only in clinical settings, but also in the approaches to delivery of services in the different countries.

In Italy, the lack of consistency in the management of rehabilitation services is a well-known problem, which has somewhat improved over time as regards the suitability and efficiency of admissions to inpatient rehabilitation as well as the stability in the levels of clinical inappropriateness (approximately 27%); however, differences are still considerable, both regionally and in terms of rehabilitation type by nosological category (orthopaedic, neurological, cardiac and respiratory) (14).

Based on the Italian National Plan for Rehabilitation (INPR) for 2011, the Italian National Health Service (NHS) envisages three levels of Physical & Rehabilitation Medicine (PRM) interventions in post-acute inpatient settings: intensive, intensive at high specialization units, and long-term or extensive care. Each level should be based on the patient's specific needs (15). The highest degree of heterogeneity in admissions to intensive rehabilitation is due not only to the patient case-mix typical of rehabilitation medicine, but also to inter-regional differences in the classification of rehabilitative settings.

The rules that each region adopts to define the criteria for access to rehabilitative settings and their differentiation are mainly underpinned by principles of administrative and management logic. This inevitably leads to an extremely varied regional landscape. For example: Umbria and Emilia-Romagna divide rehabilitative care into intensive, extensive, and high specialty; Piedmont offers

three levels of care (1st, 2nd and 3rd) plus long-term care comparable to the extensive level of Umbria and Emilia-Romagna; Tuscany tackles the problem of internal rehabilitative heterogeneity by providing yet another different solution, i.e. a specific pathway for post-acute orthopaedic patients (16-19).

The problem of patient case-mix in rehabilitation medicine could seemingly be solved in the context of clinical research. A solution could be to divide patients into subgroups by comparing those that are most similar in terms of variables such as age range, comorbidity, condition, etc., or making mathematical adjustments (20).

However, few studies in the field of rehabilitation deal with the patient case-mix complexities, so that the key to interpretation ultimately seems to lie in the hands of clinicians, urging for the definition of “a guideline document that identifies appropriateness criteria for use of the various rehabilitative settings” (21, 22).

Combining Evidence Based Medicine (EBM) with “clinical expertise”, this is the first study in Italy that tries to define admission criteria in intensive rehabilitation medicine using the Delphi method: a sharing process involving a panel of national experts.

## Materials and Methods

### *Study design*

This Delphi survey is a study on quality improvement in healthcare conducted in compliance with international guidelines (23) and the Declaration of Helsinki.

The study protocol was approved by the Bioethics Committee of the University Hospital of Parma (ref. CEPR-Prot N 1,175). No informed consent was needed; all participants were informed of the implications of the study and explicitly accepted to participate by providing their e-mail addresses.

Clinicians are not supported by evidence-based guidelines for the selection of patients through appropriate criteria for admission to intensive rehabilitation. Thus, the Delphi method (24) was chosen among the different methodological approaches because it makes it easier to compare the opinions of experts about a specific topic and to determine the extent to which they agree about decisions in various areas, from more clinical to more organizational ones. This technique allows expert opinions to be compared and helps clarify what decisions can be made based on the maximum correlation expressed by them for specific options (23-25).

To select the experts participating in the Delphi panel, the research team developed a set of criteria, partly taking into account the poor consensus that still exists about the definition of expert (26). The experts had to have practical experience in the research fields underlying the study, to be representative of the national territory, to take all the time that was necessary to complete each round, to agree to keep the information confidential, and to be experienced in both clinical rehabilitation and healthcare organization. The reason for the last requirement was that admission to rehabilitation has an important impact also in the area of healthcare economics and management.

To minimize selection bias and to increase the external validity of the survey, 31 heterogeneous experts were selected among health professionals active in scientific societies and were invited to participate. A first detailed communication regarding the project with an application for participation was individually sent with all the necessary information. Eighteen experts who met the criteria joined the initiative. The final panel that completed the entire process was composed of 16 heterogeneous experts: eight psychiatrists, one neurologist, three public health medical doctors, one specialist in economics, one nurse, and two physiotherapists.

These experts, who were duly informed about the rules and the length of the procedure, never changed for the entire duration of the Delphi survey and responded to all rounds.

Electronic questionnaires were sent individually via e-mail to ensure the participants' anonymity throughout the process. The participants had one week to respond to the questionnaire; a reminder was sent to those experts who had not yet submitted their answers in the week following the deadline. After two weeks of non response, the experts were excluded from the study.

To encourage participation in the panel, a maximum number of three rounds was set *a priori*, with a possible fourth one to gather any further general considerations. This choice was based on the evidence provided by several authors that, in most cases, three iterations are sufficient to collect the necessary information and to reach the established level of consensus (27). Furthermore, the prior establishment of the number of rounds is an indicator of good Delphi process planning (28).

The Delphi survey was held over three months. It discussed items addressing functional ability/disability (e.g. mobility, self-managing, etc.), nursing care, medical and rehabilitative treatment needs, social and prognostic aspects.

The items selected for the survey were mostly based on rehabilitation literature and were derived from a set of hospitalization criteria used daily in eight randomly called Italian rehabilitation centres, both public and private, that accepted to participate in the project. No rehabilitation expert from these centres took part in the Delphi survey.

The first Delphi round involved the distribution of a questionnaire with 10 closed multiple-choice questions, two close questions without multiple choice, and one open-ended question.

One of the closed multiple-choice questions consisted of 15 closed multiple-choice

sub-questions. For each multiple-choice question and sub-question, the experts were asked to assign a rating on the Likert scale, with scores from 1 to 5 according to the degree of agreement with a given statement. The possible answers were: totally disagree, disagree, do not know, agree, and strongly agree.

Each answer that the panel experts were requested to provide to all questions or sub-questions in the questionnaire is reported in the text as an "item". This means that in the first round of the Delphi survey the experts had to respond to 29 items (see Appendix 1 for the content of Delphi Round 1).

The items from the first questionnaire concerned the concept of appropriateness, both in general and with respect to admission to intensive rehabilitation.

For questions only, a space was also provided for comments, so that respondents could give reasons for their answers or suggest changes that could make the question more effective and complete.

Based on the answers provided by the experts in the first Delphi round, the second questionnaire was drawn up by removing the items that had already achieved a high degree of homogeneity and keeping the ones which had not demonstrated an acceptable consensus level. These items were reformulated, taking into account the suggestions provided by the experts in their comments. Furthermore, new closed multiple-choice questions were added. Some of these consisted of sub-questions, for a total of 29 items requiring answers (Appendix 2). Only the items for which an agreement was reached were considered for the list of rehabilitation admission criteria.

In later rounds (Appendix 3), experts were asked to try to reach a consensus on items concerning intensive rehabilitation for different specialties: cardiology, neurology, and orthopaedics. Again, only the items for which an agreement was reached were considered for the list of rehabilitation admission criteria.

Finally, there was a “fourth Delphi round”. It was not organized in the same way as the previous rounds. In fact, the aim of this round was not to gather expert opinions about certain items or to assess convergence, but to give the panel a summary of the results of the process, providing the opportunity to comment on the data obtained and leave suggestions. The convergence criterion and the final judgment expressed by the experts, when reached, were reported for each question.

The items that were distributed to the experts through the Delphi process were drawn up and processed using the criteria of appropriateness and the reasons for inappropriateness from the Italian appropriateness evaluation protocol for rehabilitation (2).

The answers provided in each Delphi round were analysed and processed to obtain the average value for each item as a measure of the general trend as well as the standard deviation (SD) value, from which convergence was calculated (high convergence if SD was  $<1$ ) to measure the degree of answer variability. Questions with a high convergence score demonstrated a degree of standardized opinion (agreement or disagreement) among experts about a specific item and therefore were not submitted again in the next round.

The percentage of experts who claimed to agree or disagree was evaluated in relation to this measure: if at least 70% of the judgments of experts referred to the two categories for expression of agreement (“strongly agree” and “agree”) or expression of disagreement (“strongly disagree” and “disagree”), these judgments were deemed homogeneous. It was not possible to draw any final conclusions about the items for which these thresholds of convergence and consensus were not reached. On the other hand, the items on which the experts reached a consensus were considered as either providing appropriateness criteria for admission to intensive rehabilitation or reasons for inappropriateness.

## Results

Overall, three rounds were held, plus a final one for the return of results. Thirty-one rehabilitation experts were involved, but only 16 (51.6%) completed the Delphi survey.

### *Delphi Round 1*

The first round involved the administration of a questionnaire composed of 13 questions (only one of which was open-ended); some of them were broken down into more specific sub-questions, for a total of 29 items of a general nature. Fifteen items (51.7%) related to five questions reached a high convergence in the first round, so only the remaining items were included in the second round. In addition, one item was resubmitted because in the “comments” field the experts had asked to clarify the definition of its content (“clinical stability”), in spite of the fact that this item had achieved a high level of convergence in the first round.

### *Delphi Round 2*

The second round comprised 11 closed multiple-choice questions, five of which consisted of sub-questions, for a total of 40 items requiring an answer, 10 of which were revised because they had already been formulated in the first questionnaire. In this second round, the experts had to respond to more detailed items in order to investigate rehabilitation treatment in specialized fields. In particular, the items asked for expert advice were those on the appropriateness of hospitalization in orthopaedic, neurological, and cardiological rehabilitation. The combination of the percentage value and the dispersion value showed a good degree of convergence; for this reason, in the third round it was necessary to reintroduce only one item, which had not reached a good degree of agreement in the second round.

### *Delphi Round 3*

The questionnaire of the third round consisted of four questions structured on 12 items: one on general rehabilitation, four on neurological rehabilitation, and seven on orthopaedic rehabilitation. The question from the second questionnaire was reformulated and asked again, narrowing the response so that it only applied to rehabilitation in orthopaedics and cardiology. This new specification meant that the experts would respond more homogeneously. Thus, the answers to the question achieved a good degree of convergence.

The process ended after the third round, even though no agreement was reached among the experts on three items concerning neurological rehabilitation and three concerning orthopaedic rehabilitation.

### *Delphi Round 4*

A summary of the survey results was sent to the panel.

Variables that do not affect admission to intensive rehabilitation, for which the consensus of experts was reached in one round, were: age over 65, presence of cognitive deficits, autonomy on admission, and the presence of co-pathologies.

Tables 1, 2, 3, and 4 summarize the criteria for appropriateness and the reasons for inappropriateness of intensive rehabilitation admissions on which the experts agreed; an agreement/disagreement percentage is given next to any item without a high convergence value. Only one criterion of appropriateness for outpatient hospitalization in intensive rehabilitative settings – “precise definition of how to proceed with a complex project, but implemented during a period of hospitalization in intensive rehabilitation” – reached the highest possible convergence in a single round.

In all rounds, there was a high level of response, particularly in the first and second rounds, where 100% of the questionnaires were returned, compared with a return rate of 94.11% in the third round.

In the Delphi survey, a total of 79 items structured on 28 questions were submitted to the expert panel. In most cases (56%), the Delphi process resulted in a homogeneous final judgment among experts, both in terms of agreement and disagreement with the claims contained in the questions. Only in the remaining 44% of cases were the experts' opinions not distributed evenly, which did not permit final conclusions to be drawn.

There was a particular lack of agreement when the experts were asked to provide their opinion on admission to specialized types of intensive rehabilitation: in the items related to the fields of neurology and orthopaedics, the rates of response with no uniformity of opinion were 73% and 53%, respectively. For example, no consensus was reached among the experts on the following statement: “In neurology, admission to an intensive rehabilitation unit is valid if at least one of the following symptoms has occurred recently (within 60 days):

- Plegia associated with cognitive impairment
- Concomitant motor, cognitive and behavioural disorders
- Or concomitant presence of at least three of the following symptoms: hemiplegia, paraplegia, quadriplegia, upper limb monoplegia, lower limb monoplegia, trunk control deficits, dysphagia, dysarthria, dysphonia, aphasia, neglect, anosognosia, apraxia, hemianopia, diplopia, urinary retention or urge incontinence”.

The situation was very different for cardiology, where experts were always in agreement on the statements contained in the questionnaires.

Even for the section on intensive rehabilitation on an outpatient basis, the panel was homogeneous in its responses. There are apparently recognized standards of appropriateness that are unofficially common among respondents, as these questions yielded a high degree of convergence in the first round.

Table 1 - List of appropriateness criteria for admission to intensive rehabilitation, with the corresponding data of convergence, percentage of agreement/disagreement and number of rounds necessary to reach consensus

Criteria for appropriateness of admission To intensive rehabilitation facilities			
Questions:	Convergence	Percentage of agreement /disagreement	Number of rounds necessary to reach consensus
1.The patient is in a phase of clinical stability (cardio-circulatory, respiratory, metabolic, infectious stability, etc)	Average	82,35% Agree	2
2. The patient has a favorable rehabilitative prognosis	High		1
3. The patient has a need for nursing care on a daily basis (at least 3 visits in 24 hours)	Average	70,59% Agree	2
4. The patient needs medical care on a daily basis	High		1
5. The patient is in need of social care / rehabilitation regarding trunk mobility in posture transfers (bed-chair, chair-upright)	High		2
6. The patient needs care / rehabilitative care in the management of nutrition and / or urination / defecation	High		2
7. The patient needs an integrated multidimensional rehabilitation approach (simultaneous presence of at least 2 of the following rehabilitation approaches: motor, cognitive, swallowing, behavioral, occupational, orthotic)	Average	70,59% Agree	2
8. The patient has invasive medical devices for which a weaning plan must be implemented (cannula, peg)	Average	70,59% Agree	2
9. Some persistent criteria (reported by 3 through 8) for no more than three months	Average	76,46% Define a time value longer than 3 months	Agreement Time criteria > 3 Months
10. Intensive rehabilitation following hospitalization for acute event	High		3
11. Inability to manage care at home, regardless of the severity of symptoms	High		1
12. Inability to travel from the home to the gym	High		1
13. Inability to manage medication needs independently	High		1
14. Inability to comply with the rehabilitation plan without a significant need for integration between different treatments in progress	Average	70,59% Agree	1

Table 2. – List of appropriateness criteria for admission to specialized intensive rehabilitation, with the corresponding data of convergence, percentage of agreement/disagreement and number of rounds necessary to reach consensus

Admission criteria for appropriateness For intensive rehabilitation facilities			
Criteria:	Convergence	Percentage of agreement/dis-agreement	Number of rounds necessary to reach consensus
<b>Neurology</b>			
15. Presence of critical phases with documented risk of negative evolution of disability in order to maintain / restore the previous level of functionality	High		1
<b>Cardiology</b>			
16. The patient has a serious cardiac complaint that requires skills in rehabilitation treatment	High		1
17. The patient has a symptom that affects disability and therefore care management	Average	70.59% agreement	1
18. The patient has a complex cardiology framework and consequent difficulty in managing care	Average	70.59% agreement	1
19. Presence of comorbidities that may complicate the picture at an early stage	High		1

Table 3 - List of inappropriateness criteria for admission to intensive rehabilitation, with the corresponding data of convergence, percentage of agreement/disagreement and number of rounds necessary to reach consensus

Reasons for inappropriateness for admission To intensive rehabilitation facilities			
Reasons	Convergence	Percentage of agreement / disagreement	Number of rounds necessary to reach consensus
1. Needing nursing care on a weekly basis	High		1
2. Needing nursing care on a monthly basis	High		1
3. Needing medical treatment on a weekly basis	High		1
4. Needing medical care on a monthly basis	High		1
5. Needing special care and assistance/rehabilitation for cognitive-behavioral deficits	High		1
6. Previous (low collaboration)	High		1
7. Need special care and assistance/rehabilitation in social isolation or lack of care-giver	High		1
8. Need special care and assistance/rehabilitation due to barriers in the home environment	High		1
9. Need special care and assistance/rehabilitation in patients with pre-existing disabilities	High		1



Table 4. – List of inappropriateness criteria for admission to intensive rehabilitation, with the corresponding data of convergence, percentage of agreement/disagreement and number of rounds necessary to reach consensus

Reasons for inappropriateness for admission To specialist intensive rehabilitation facilities			
Reasons	Convergence	Percentage of agreement/disagreement	Number of rounds necessary to reach consensus
<b>Neurology</b>			
11. The patient is admitted due to problems relating to their family	High		1
12. The patient is admitted due to barriers in the home environment	High		1
<b>Cardiology</b>			
12. The patient is admitted due to the presence of anxiety/depression symptoms	High		1
13. The patient is admitted due to problems relating to their family	High		1
14. The patient is admitted due to barriers in the home environment	High		1
<b>Orthopedics</b>			
15. The patient is admitted due to the presence of premorbid cognitive disorders or confusion	Average	70,59% disagree	1
16. The patient is admitted due to problems relating to their family	High		1
17. The patient is admitted due to barriers in the home environment	High		1
18. The patient is hospitalized for functional impairment	High		1
19. The patient is hospitalized for reduced characteristics	High		1
20. The patient is hospitalized for reduced muscle strength	High		1
21. The patient is hospitalized for reduced strength	High		1

## Discussion

Using a scientifically validated method, this study represents the first Italian attempt to define a set of appropriate admission criteria for intensive rehabilitation. At the end of a survey conducted with the Delphi method over a three-month step-wise period, a panel of 16 rehabilitation experts drew up a list of 19 criteria for appropriate admission to intensive rehabilitation facilities, alongside 21 reasons for inappropriateness. The list

encompasses both general rehabilitation criteria/reasons and specific items for different rehabilitation specialties: cardiology, neurology, and orthopaedics. The panel's consensus did not produce any specific criteria supporting hospitalization of orthopaedic rehabilitation patients.

Some topics covered in the questionnaire, of both qualitative (e.g. social and prognostic aspects) and quantitative (e.g. time interval from acute event, nursing and medical care, etc.) importance, showed that all the options

regarding the concepts of “clinically stable” and “acute event” still need to be taken into account and be made explicit, as does the use of the Barthel scale, which, in our opinion, requires a different panel of experts and another Delphi process (30).

The choice of the Delphi method to achieve the pre-set objectives proved an excellent one and strengthened the sharing of issues in the field of rehabilitation medicine. The cooperation achieved on the appropriateness of admission to rehabilitative care has led to the collection of views with a high correlation and, conversely, has swayed some convictions that seemed deep-rooted.

In rehabilitation medicine, there are some implicit, homogeneous criteria that experts apply and that have emerged from the start in the absence of a complete picture – for example, the variables of age, co-pathologies, and the use of the healthcare setting (4, 5, 6, 7, 8), as it was also clear from the revision proposed by Hakkennes et al 2011 (31).

In our study, we chose to consider as questions showing a good level of consensus those for which at least 70% of the responses fell into two categories on a scale of five possible answers. This value was chosen based on what has been reported in the literature as a result of previous experience (23, 27-29).

The online mode of the questionnaire proved to be inexpensive, user-friendly, straightforward, and easy to understand and use straight away. The information was available very quickly and allowed compliance with the dates scheduled in the research protocol. The survey in the various specialized fields highlighted areas where there was not a high level of correlation. This is mainly true for orthopaedics, where correlation in expressing judgments of inappropriateness was much easier to find than for appropriateness of admission to rehabilitation. However, it should be considered that there are many types of orthopaedic rehabilitation patients, with varying degrees

of rehabilitative complexities and needs, as opposed to, for example, cardiological rehabilitation, which is more easily standardized (4, 7, 12, 32).

It seemed also that some positions expressed by the panel reflected regional differences and/or were in defence of their clinical and procedural habits.

Furthermore, it must be pointed out that some behaviours may have been influenced more by administrative issues than by clinical choices.

### *Study limitations*

This Delphi study did have some limitations. First, there was low responsiveness from rehabilitation clinicians in terms of participation in the panel – only 16 (51.6%) completed the entire survey out of a total of 31. However, this low number is consistent with other studies (33-34); moreover, all 16 were leading experts in the rehabilitation field, so their answers can be considered representative of the opinions of all other colleagues. The reasons for this scarce participation by experts were not investigated further, but they might be explained by lack of time or low confidence in the Delphi process; unfortunately, though, in our opinion it might also demonstrate the lack of importance that Italian rehabilitation professionals attach to the level of appropriateness of their work. This is a further sign of the lack of scientific evidence in this area and the need to reach a consensus as wide as possible on jointly established criteria that are defined according to objective and uniform methods. Second, the selection of experts was based primarily on criteria defined by the research team and on their membership in scientific societies. Third, not all Italian regions were represented in the panel, although we believe that this did not ultimately affect our findings. Finally, the survey addressed the needs of neurological, cardiological and orthopaedic rehabilitation patients on only one

level of rehabilitative hospitalization, the intensive one. However, it is believed that the involvement of patients belonging to different nosological categories, for which rehabilitation needs are not necessarily equal, may be a strong point in favour of the study reliability.

Despite its limitations, its results represent the outcome of a first national attempt at sharing in a highly heterogeneous and self-referential arena. Although more research is needed for further progress, we believe that they are a valuable starting point for the future support of rehabilitation services.

## Conclusions

This study proves that the choice of the Delphi method, also supported by other experiences reported in the literature, seems to combine EMB and clinical practice, making it a viable strategy to reduce practice variations, closing the evidence-practice gap, and improving the quality of rehabilitation services (21, 32, 35).

The results of this project can then be used to support the establishment of rehabilitation guidelines based on scientific evidence, in accordance with clinical skills, as well as to implement and validate algorithms for the evaluation of patients' needs in terms of intensity of rehabilitative care at different levels.

Furthermore, considering that very little research is being carried out on rehabilitation, the contribution of this project and its potential future developments could have a very positive impact not only on practice (improving the health of patients), but also on clinical research (classification of activities, centres and professionals working in this field), encouraging rehabilitation practitioners to implement collaborative research as required by the European legislation (36).

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## Conflicts of interest

The authors hereby state that there is no conflict of interest regarding the matters discussed in the manuscript.

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We are grateful to all the team members who worked to produce these results and to all the Experts that accepted to participate in the Delphi Panel procedure for their contribution in defining, for the first time in Italy, the list of Criteria for Appropriate Admission to Intensive Rehabilitation Units, in full compliance with strict scientific methods.

## Riassunto

***Medicina basata sulle prove di efficacia e pratica clinica: il primo tentativo italiano di identificare criteri di appropriatezza per l'ammissione in riabilitazione utilizzando il metodo Delphi***

***Premessa.*** La crisi economica mondiale ha imposto un maggior controllo sui costi in ambito sanitario e in particolare, sul livello di appropriatezza con cui le prestazioni vengono erogate per poter rispondere più adeguatamente ai reali bisogni dei pazienti. Il ricovero in riabilitazione è estremamente a rischio di inapproprietezza. Lo studio svolto cerca di definire, per la prima volta in Italia, criteri condivisi di appropriatezza di ricovero in riabilitazione intensiva utilizzando il metodo Delphi e coinvolgendo esperti di livello nazionale.

***Materiali e metodi.*** In accordo con la letteratura internazionale si è svolto un Delphi su tre turni. Gli esperti selezionati sono stati contattati individualmente via posta elettronica, attraverso una piattaforma, per salvaguardare il loro anonimato. I quesiti riabilitativi a cui gli esperti hanno fornito risposta esprimendo il loro accordo su scala Likert a 5 punti (dall'assolutamente NON al Completamente d'accordo) o in risposta aperta sono stati formulati partendo da quanto pubblicato in letteratura.

***Risultati.*** Durante i tre turni gli esperti hanno valutato 79 quesiti. L'esito del Delphi ha permesso di ottenere una lista di 19 criteri che rendono appropriata l'ammissione in riabilitazione ed una lista di 21 ragioni di inapproprietezza.

***Conclusioni.*** Questo studio descrive il primo tentativo italiano di definire in maniera obiettiva e condivisa i criteri che appropiano l'ammissione in riabilitazione intensiva. Solo 16 esperti hanno concluso tutti e tre i turni del Delphi rispetto ai 31 selezionati e contattati.

Questa ridotta partecipazione del personale che opera in riabilitazione potrebbe essere testimonianza di più aspetti (pianificazione temporale o familiarità con la metodologia), tra cui anche una scarsa consapevolezza del bisogno di criteri condivisi. Consapevolezza che a nostro avviso potrebbe essere associabile anche alle numericamente non fiorenti evidenze scientifiche in questo ambito, in cui oggi più che mai, c'è necessità di più alti livelli di consenso e condivisione, soprattutto sui criteri di ammissione utilizzati.

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