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BRIEF COMMUNICATION

International Confederation for Cleft Lip and Palate and Related Craniofacial Anomalies Task Force Report: Speech Assessment

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This paper describes the outcome of the "Speech Assessment" Task Force of the 12th International Congress of the Confederation for Cleft Lip and Palate and Related Craniofacial Anomalies, held in 2013. This task force attempted to identify a draft set of professional competencies required by speech professionals for the perceptual evaluation of cleft palate speech. The task force also generated a series of general and competency-specific questions that could be useful in subsequent evaluation and study of these competencies, particularly in regards to the application of these competencies to cross linguistic speech assessment. Further review and revision of these competencies is recommended.

KEY WORDS: *professional competencies, speech assessment*

Assigned Objectives of the Task Force

The 12th International Congress of the Confederation for Cleft Lip and Palate and Related Craniofacial Anomalies contained a number of symposia and task forces established specifically to address the objectives of the confederation. The Speech Assessment Task Force is one of two task forces created to address the objective of "assisting and encouraging the establishment of internationally agreed standards and methods of assessment and documentation that will permit comparison of results of different methods of treatment worldwide."[1] The task force has been asked to "continue the development, and expand the application of internationally applicable standardized 'cleft' (palate) speech evaluation."[1]

Task Force Functioning

Membership Acquisition and Demographics

The task force initially consisted of 12 professionals involved in cleft and/or craniofacial care, of whom ten were speech professionals (e.g., a speech-language pathologist), hereafter abbreviated as SP). These task force members included representatives from Australia, Germany, India, Japan, New Zealand, Poland, Taiwan, United Kingdom, and the United States. The task force chair actively contacted and sought the involvement of a further seven SPs from a number of additional countries to bring the core group to 19 before the international congress. At the international congress in May 2013, an additional 31 delegates attended the task force luncheon, three of whom participated in a subsequent focus group addressing the area of early speech and language.

Methods of Interactivity

The task force members primarily communicated by e-mail and telephone. A number of smaller face-to-face meetings periodically occurred when a group of members were present at a subsequent conference or other professional event.

Issues Addressed

Initial Issues

The first issue the task force encountered was the need to identify the likely risks and/or opportunities to be faced over the course of the task force's work leading up to the congress, as well as clarifying the expectations of the co-chairs of the 2013 congress task forces.

The project commenced with a small meeting of task force members located close to the task force chair for the purpose of conducting an initial brainstorming session to identify the likely risks and opportunities for this project and to thus determine an initial course of action. Issues raised in the discussion included the following:

Risks:

1. The geographical and time zone constraints of having such a diverse task force membership

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2. The risk of beginning the project with a focus that was potentially too narrow, resulting in an inability/difficulty to capture the most important information about pertinent issues
3. The risk of reinventing the wheel as opposed to continuing and expanding previous efforts as requested by the co-chairs of the 2013 congress task forces.

Opportunities:

1. To engage in meaningful dialogue with international professionals related to the core difficulties experienced in the perceptual evaluation of cleft palate speech.
2. To look further into the role that professional competencies play in cross-linguistic evaluation (and reporting and thus comparison) of speech outcomes, and to address the issues that surround the acquisition and maintenance of these competencies.

The aforementioned information was shared with the co-chairs of the 2013 congress task forces who emphasized that the task force was very much about "starting a conversation" about speech assessment. That is, it was not the task force's role to solve all the problems associated with speech assessment. Rather, the task force would essentially identify an area within speech assessment that needs attention and start by planning a road map toward addressing the issue.

After the brainstorming session, it was decided that the task force chair would develop an electronic survey/questionnaire to disseminate to all members of the task force. The questionnaire was designed to collect a range of information from all task force members including the following:

1. Demographic information
2. Motivations/reasons for joining the task force
3. Experience and interest in speech assessment
4. The focus of this task force
5. Ideas for (and ratings of) suggested project(s)

Of the 19 task force members, 17 responded to the questionnaire. In addition to the issue of training and the need to look at global measures of speech performance, a sample project looking at the issues surrounding the professional competencies required for the evaluation of cleft palate speech was identified as being of particular value. This project was rated favorably by at least 90% (16/17) of the task force members in each of the following areas:

1. Appropriateness to topic
2. Clinical need
3. Teaching/education need
4. Perceived value
5. Likelihood that it could be completed by the task force

In a progress report to the co-chairs of the 2013 congress task forces after analysis of the questionnaire results, the task force chair commented that the task force would proceed with a professional competencies project and work toward the following:

1. Identifying issues associated with professional competencies that affect the standardized evaluation of cleft palate speech
2. Incorporating the training issues identified in the questionnaire into the evaluation of the competencies
3. Initiating discussion about global assessment parameters of speech assessment

How Issues Evolved During the Process

The primary issue the task force encountered was the difficulty in organizing a suitable time to meet together, given the geographic distances between members. Despite having a range of times available, attendance on scheduled telephone calls was low. Communication online, for example, via e-mail, was more effective.

The second issue the task force faced related to two periods of unplanned long service leave by the task force chair (before and after the congress), which undoubtedly affected the group's momentum.

To combat these issues, the task force chair organized times for a smaller number, or subset, of the task force members to meet when opportunities arose. For example, five members of the task force from three countries routinely hold a professional peer review meeting every two months. By dovetailing task force discussions into that peer review meeting, the task force conversation could continue, albeit with fewer numbers. More recently, six members of the task force from three countries attended a conference together in Sydney, Australia, to continue discussions.

Conclusions of the Cleft 2013 Speech Assessment Task Force

The output from this task force consists of a draft set of professional competencies for the perceptual assessment of cleft palate speech and a series of refined questions that could be used to examine these professional competencies.

Draft Professional Competencies

The task force initially agreed that in order to best study the professional competencies required to evaluate cleft palate speech, the scope of professional competencies to be identified/included should:

1. Be limited to the specific skill set that trained SPs, as members of multidisciplinary cleft and/or craniofa-

cial health care teams, bring to the perceptual evaluation of cleft palate speech
2. Not be exhaustive to the point of documenting all professional competencies required in order for SPs to practice clinically in any setting
3. Not focus on early speech and language skills

The exclusion of the early speech and language skills was originally agreed upon in order to reduce the perceived scope, and thus the potential complexity, of the project. However, once the task force members met face-to-face at the 12th International Congress in Florida, it was agreed that the competencies required for early speech and language were just as important as those required to assess later speech issues, and they should be considered.

A draft list of the competencies identified by the task force members is found in the Appendix.

Questions for Competencies

In order for the task force members to be able to evaluate the documented professional competencies for the perceptual assessment of cleft palate speech (in terms of their impact on standardized cleft palate speech assessment), a framework of inquiry needed to be constructed. To stimulate discussion about this framework (or line of questioning) during the teleconference calls, a series of general questions was asked to elicit task force members' thoughts on the various issues, barriers, and roadblocks preventing world cleft care from having standardized assessment practices. Items identified in the discussions essentially related to one of the following three questions/concepts:

1. How can an SP best *gain* the particular professional competency?
2. How can an SP best *maintain* the particular professional competency?
3. Which competencies are *best suited* for cross-linguistic study?

One of the more interesting comments in the discussions related to the need for competencies to identify SPs who may think (or understand) they have an appropriate level of proficiency in a particular competency or competency area when in fact they potentially may not.

The following questions were identified in relation to the proposed competencies:

General questions:

Q.1 Which competencies are most clinically relevant?
Q.2 Which competencies are most clinically relevant for cross-linguistic (nonnative) speech evaluation?
Q.3 Which competencies are regarded as being most easily learned or transferred to SPs new to the evaluation of cleft palate speech?
Q.4 Which competencies, if any, are most easily transferable to cross-linguistic (nonnative) cleft palate speech evaluation?
Q.5 Does this list of competencies differ across languages? That is, are there differences in the competencies that are required by particular languages?

Competency-specific questions:

Q.6 How do we best *assess* this competency?
  a. In SPs new to the evaluation of cleft palate speech
  b. In SPs experienced in the evaluation of cleft palate speech

Q.7 How do we best *teach* this competency?
  a. In SPs new to the evaluation of cleft palate speech
  b. In SPs experienced in the evaluation of cleft palate speech

Q.8 Is our teaching of this competency different for routine clinical care evaluation as opposed to evaluation for clinical audit?

In conclusion, the task force has had some difficulties but has been successful in starting the conversation about professional competencies for speech assessment in persons with cleft palate and/or related craniofacial conditions. The draft competencies still need further review, revision, and potential expansion, but they are a good platform from which further development could continue. This set of competencies could potentially help prioritize areas of further training, study, cooperation, and ultimately, standardization.

Recommendations for the Cleft 2017 Task Force

Recommendations for the Speech Assessment Task Force for 2017 are as follows:

- That this report be uploaded to the 2017 congress website for future reference by all task forces
- That the 2017 congress contain a speech assessment task force (or similar) to continue the work of the current task force
- That two co-chairs be appointed for the 2017 Speech Assessment Task Force to eliminate the issue of lost momentum if one chair becomes unavailable for a period of time
- That dedicated Web space and appropriate Web access (for task force chairs) be made available for the 2017 task force(s) for uploads, storage, blogging, etc.
- That access to electronic survey tools or similar be available to the chairs of the 2017 task force(s)
- That the 2017 Task Force Committee identifies selected persons from a range of countries who are known/expected to be attending the 2017 congress

- That consideration be given to a small budget to cover the cost of telephone calls, etc.
- That the 2017 Speech Assessment Task Force identify further questions that need to be asked in relation to
  1. The cross-linguistic aspects of cleft palate speech evaluations
  2. The standardization of cleft palate speech evaluations
- That the 2017 Speech Assessment Task Force use weighted multivoting techniques (or a similar technique) to identify the competencies that are regarded as the:
  1. Most clinically relevant (in general)
  2. Most clinically relevant for cross-linguistic (nonnative) speech evaluation
  3. Most easily learned/transferred to SPs new to the evaluation of cleft palate speech
  4. Most easily transferable to cross-linguistic (nonnative) cleft palate speech evaluation, if any.
- That the 2017 Speech Assessment Task Force to identify the ways in which we should best
  1. Teach competencies to new SPs
  2. help existing SPs to maintain competencies

Critique (Positive and Negative) of the Task Force Process

- The task force is a very beneficial concept and should be maintained for 2017 and beyond.
- The idea of having a task force presentation at the congress was very positive.
- The task force members should be identified for 2017 as soon as possible in order to determine their availability and willingness to commit to the task force.

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Reference

1. Program Outline of the 12th International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies. 2012. Available at: http://www.cleft2013.org/program.html#tas. Accessed August 1, 2012.

Appendix

Title: Draft Professional Competencies for the Perceptual Evaluation of Cleft Palate Speech

Authors: Speech Assessment Task Force of the International Congress on Cleft Lip/Palate and Related Craniofacial Anomalies, Orlando, Florida, USA, May 2013

Status: Draft

Date: February 28, 2014

Scope: Limited to the specific skill set that trained speech professionals (SPs), as members of multidisciplinary cleft and/or craniofacial health care teams, bring to the perceptual evaluation of cleft palate speech.

Abbreviations: SP = speech professional (encompassing speech pathologists, speech-language pathologists, and/or speech-language therapists); IPA = International Phonetic Alphabet; extIPA = extensions to the International Phonetic Alphabet

Terms: Caregiver encompasses caregivers, carers, parents, and significant others

General Principles

In addition to the basic proficiencies required for all SPs, the following general competencies are regarded as being essential for the perceptual evaluation of all persons with confirmed or suspected cleft palate speech:

1. The SP should have a thorough understanding of the constructs being evaluated within a cleft palate speech evaluation.
2. The SP should be able to identify the phonetic contexts within their native language that are vulnerable to the effects of cleft palate speech.
3. The SP should have a thorough understanding of the anatomy of the velopharyngeal mechanism.
4. The SP should have a thorough understanding of the ways velopharyngeal insufficiency and other structural abnormalities, such as a palatal fistula or a specific occlusal pattern, affect the speech of their native language.
5. The SP should have a thorough understanding of any relationships between constructs—for example, the relationship between vocal quality and hypernasal resonance—and how this affects perceptual assessment ratings.
6. The SP should be able to document the common characteristics of speech seen in persons with cleft and/or craniofacial anomalies using narrow phonetic transcription as defined in the IPA and extIPA charts.

Background Information/Case History

The SP should obtain whatever background information is necessary to make an informed decision (or decisions) about the nature of a person's speech.

7. The SP should obtain a thorough clinical history including the following:
   - The person's original cleft and/or craniofacial condition/diagnoses
   - An operative/surgical history (not limited to cleft-related surgery)
   - A medical history
   - A history of recent illnesses and interventions
   - A history of medications being taken, for example, stimulant medications for behavior management and inhaled corticosteroids for respiratory conditions

If the SP suspects that a particular surgery, illness, and/or intervention in the case history may influence their assessment of the person's speech, then the SP has an obligation to investigate this further to ensure that he or she understands the possible impact on speech.

8. The SP should review the previous treatment recommendations for speech to determine the degree of completeness/compliance since the previous evaluation (if applicable). Discussion should be held with the patient and/or the caregiver(s) to identify any barriers that may have prevented (and still prevent) treatment recommendations from being completed. Suggestions on ways to overcome these barriers should be given to the patient and/or caregiver(s) as appropriate.
9. The SP should obtain information about the current health (at the time of the assessment) of the patient in order to determine whether or not this could affect the accuracy and representativeness of subsequent judgments/ratings of the patient's speech. This information could be elicited from the patient or the caregiver(s) depending on the patient's age.
10. The SP should obtain information about any upcoming planned surgery, investigations, or other interventions that may affect subsequent recommendations made from the speech evaluation.
11. The SP should enquire about the presence (or recent presence) and frequency of any nasal regurgitation of food or fluid during eating and/or drinking, including the nature of any regurgitated material (e.g., regurgitation of fluids only). If present, the SP should attempt to elucidate the course/site of the regurgitation, if possible, as part of this evaluation.
12. The SP should enquire about whether the patient is (or has recently been) experiencing any feeding/swallowing difficulties, which may be indicative of other pathology. Referral for further evaluation for feeding/swallowing may be required.
13. The SP should enquire about whether the patient is (or has recently been) experiencing any hearing difficulties, (either reported by the patient, the caregiver(s), or others), which may be indicative of ear pathology. Referral for further evaluation of hearing and/or medical (otorhinolaryngology) evaluation may be required.
14. The SP should enquire about whether the patient has (or has ever required the use of) hearing aids or any other hearing support/amplifications system. It should also be noted whether or not the patient has this in place for the assessment and that the particular device(s) are in working order.
15. The SP should obtain a thorough speech therapy/speech-language therapy history of the patient including the following:
   - Location of therapy attendance
   - Treating SP's contact details
   - Frequency of attendance/nonattendance at therapy
   - Therapy focus (for example, has this speech therapy only been targeting language?)
   - Therapy targets and techniques
   - Therapy progress
   - Questions/concerns raised by the treating SP
   - The treating SP's expectations about the (team) SP's evaluation

The SP should be aware that to obtain the most complete information about therapy from the treating SP, direct communication should occur between the SP and the treating SP.

16. The SP should elicit information from a patient's caregiver(s), where appropriate, about the patient's speech. Information gained should minimally relate to both the function (e.g., speech intelligibility) and quality (e.g., the actual sound characteristics/distinctiveness) of the speech. Specific information should also be obtained from the caregiver(s) about their
   - Views on therapy progress
   - Expectations about the SP's speech evaluation

Caregivers should always be given the opportunity to describe the (speech) problem in their own words. This discussion should, where possible, also aim to collect the same information from others, such as a schoolteacher or family friend, even if reported via the caregiver(s).

17. When appropriate, the SP should elicit information about speech performance from the patient being evaluated. Information gained should minimally relate to both the function (e.g., speech intelligibility) and quality (e.g., the actual sound characteristics/distinctiveness) of the speech and the expectations they bring to the speech evaluation.
18. Obtaining a thorough case history should also result in the SP's compiling or populating a list of medical and nonmedical professionals involved in the patient's care and flagging selected professional's names to be contacted at a later time/date as appropriate.

19. After obtaining a thorough case history, the SP should have formulated a list of possible influences and/or factors to consider during the remaining aspects of the speech evaluation.
20. The case history information obtained should be documented in a standardized format for retrieval at subsequent speech evaluations. The degree of detail/scope of the case history information to be included in correspondence resulting from the evaluation is at the discretion of the SP; however, any new information collected in the case history that may potentially be important to other areas of (health) care (e.g., to another medical clinic) should be included.

Oral Examination

The orofacial or oral-peripheral examination is a mandatory and key component of any evaluation of cleft palate speech.

21. As a general rule, the SP should conduct an oral examination at each and every perceptual speech evaluation, irrespective of how well the patient is known to the team or the SP.
22. The SP should conduct an oral examination taking universal precautions in terms of protection for both the SP and the patient. This includes hand washing before and after examinations and the use of disposable gloves, tongue depressors, etc.
23. The oral examination should be conducted with the age of the patient in mind; in cases of very young children, the SP should modify his or her behavior/procedures accordingly in order to complete the examination. The SP may also have to allocate some additional time to complete the examination.
24. The oral examination should target the following areas for structural (and functional) influences/limitations that may manifest in the patient's speech:
    - Face
    - Ears
    - Nose
    - Lips
    - Tongue
    - Alveolus
    - Hard palate
    - Soft palate
    - Uvula
    - Tonsils
    - Pharynx
    - Dentition
    - Occlusion
25. The oral examination should be documented in full, including the recording of normal findings, or findings of no abnormality. A lack of documentation in a particular area may incorrectly result in a subsequent assumption that no assessment or an incomplete assessment was performed.

Speech and Language Assessment

The following competencies are intended to be applicable only to the SP's assessment of patients in the SP's native language:

26. The SP should elicit a speech sample (or samples) from the patient that contains a sufficient range of phonetic contexts designed to allow the SP to make judgments of the full range of constructs/parameters (where possible) typically evaluated in the perceptual assessment of cleft palate speech.
27. The SP should confirm with the patient/caregiver(s) that the speech sample(s) elicited are reflective of the patient's usual speech.
28. Because of the complexities seen in the speech of patients affected by cleft lip and palate and other craniofacial anomalies, it is extremely difficult to transcribe speech samples in a live clinical environment. For this reason, SPs should record (audio and/or video) their cleft palate speech evaluations to assist in subsequent narrow phonetic transcription and analysis. The presence of nasal grimace should be noted live when using an audio recording without accompanying video.
29. In the event of a patient's producing a nasal fricative in his or her speech sample, the SP should conduct a nose-holding test with sufficient commentary on the audio and/or the video recording to determine whether the nasal fricative is active or passive in nature.
30. Unless the speech samples are regarded as being normal or typical of the patient's native language, the SP should transcribe the utterances of the collected speech sample(s) using narrow phonetic transcription to determine the characteristics of the sample(s). This transcription should be completed using the IPA and extIPA symbols and diacritics.
31. The SP should have a quality improvement mechanism in place to ensure that he or she remains familiar with all the symbols and diacritics found on the IPA and extIPA charts as a period of time may pass between the need to use particular transcription, and this can easily be forgotten or confused with another transcription.

Resonance

32. After reviewing the transcription, the SP should make judgments/ratings about the presence, distri-

bution (in terms of the distribution across different phonetic contexts), frequency, consistency, and/or severity of the following specific parameters that relate to nasal resonance:

- Hypernasal resonance (including nasal realization in cases of significant velopharyngeal insufficiency)
- Hyponasal resonance
- Cul-de-sac resonance
- Mixed resonance

33. The SP should make a clinical judgment about the presence and characteristics of any laryngeal-based voice disorder and make a judgment about how any such disorder affects the SP's ability to provide the aforementioned perceptual ratings of resonance.

Abnormal Nasal Airflow

34. After reviewing the transcription, the SP should make judgments/ratings about the presence, distribution (in terms of the distribution across different phonetic contexts), frequency, consistency, and/or severity of the following specific parameters that relate to abnormal nasal airflow:

- Audible nasal emission and/or audible nasal turbulence
- Inaudible nasal emission

The SP should use a mirror or similar device to detect/confirm the presence of inaudible nasal emission.

Articulation and Phonology

35. The SP should be able to make age-specific assessments.

A. Infants and toddlers

After observing and/or reviewing the collected vocal sample from the infant/toddler, the SP should be able to make comment about

- The presence/absence of canonical babbling
- The size and characteristics of the phonetic inventory
- Syllable complexity
- The accuracy of production relative to the adult model

B. Older children

After reviewing the transcription, the SP should make judgments/ratings about the presence, distribution (in terms of the distribution across different phonetic contexts), frequency, and severity of a range of speech characteristics related to articulation and phonology, including

- Dentalization
- Lateralization
- Palatalization
- Double articulation
- Backing to velar/uvular
- Pharyngeal articulation
- Glottal articulation
- Gliding of fricatives
- Active nasal fricatives
- Passive nasal fricatives
- Weak articulation
- Consonant omission
- Nasal substitution

36. The SP should also comment about the presence of other developmental speech disorders and make arrangements or referral for further assessment as appropriate.
37. The SP should review the transcription and construct a phonetic inventory of the patient's speech at the respective speech sample levels.

Stimulability Testing

38. After reviewing the phonetic inventory, the SP should construct a target list for stimulability testing; testing results should be recorded along with cues used to elicit new phonemes or allophones.

Global Measures of Speech Performance

39. The SP should make global judgments/ratings about how the patient's speech proficiency affects such constructs as

- Speech intelligibility
- Distinctiveness of speech
- Speech naturalness
- Speech acceptability

40. In addition to any specific speech-related outcome measurements taken by the SP, the SP should also take outcome measurements using a cross-disciplinary measurement system preferably with multiple measurement domains. An example of such a system is the World Health Organization's International Classification of Functioning, Disability and Health (Child and Youth version) (ICY-CY).

Language

41. The SP should be familiar with the developmental milestones for early speech and language development, for example, the age of onset for canonical babbling and first words.
42. The SP should make a clinical judgment about whether the patient's expressive and/or receptive language skills have negatively affected the speech assessment. Referral for further evaluation and/or formal screening of expressive and/or receptive language skills deemed to be at risk (delayed or disordered) may be required.

Interpretation of Results/Differential Diagnosis

The primary objective of the perceptual speech evaluation for cleft palate speech is to diagnose the nature of a patient's speech difficulties with respect to his or her velopharyngeal function (status) and articulation and phonology skills.

43. In terms of velopharyngeal function, the SP needs to identify whether the patient under evaluation
    - *Does not have* any clinical signs of velopharyngeal insufficiency, or
    - *May have* or has a history of velopharyngeal insufficiency, or
    - *Does have* clinical sign(s) of velopharyngeal insufficiency.

The SP also needs to identify whether the patient has any clinical signs of hearing loss associated with velopharyngeal insufficiency

44. In terms of articulation and phonology, the SP needs to identify the components of the patient's speech that could be classified as
    - Compensatory speech characteristics, and thus are likely to require speech therapy intervention, and/or,
    - Obligatory speech characteristics that are likely to require consideration of surgical intervention.

The SP should also be able to identify the characteristics that are related to an underlying structural deficit and be aware that that the presence of compensatory speech characteristics may be indicative of presurgical/learned behaviors and may not be indicative of the presence of velopharyngeal insufficiency.

45. The SP needs to describe the impact and relative contribution that the following areas have on the patient's speech performance and on the expected effectiveness of speech therapy:
    - Velopharyngeal status
    - Occlusion
    - Dental status
    - Hearing
    - Language
    - Other phonological processes

Management

46. The SP should communicate the results of the speech evaluation to all parties involved in the care of the patient including
    - The cleft and/or craniofacial team
    - The patient and his or her caregiver(s)
47. The SP should ensure that any treatment plans that include recommendations for ongoing speech therapy intervention are clear and include
    - speech evaluation results
    - stimulability testing results
    - a description of any therapy techniques and/or suggested therapy hierarchies deemed to be helpful
    - a description of any structural contributions/limitations that may affect the effectiveness of therapy, for example, orthodontic state

The treatment plan should include a recommended time frame for subsequent follow-up if required as well as contact details for the SP.