Decision making tree for children with speech sound disorder (SSD)

Child presents with speech that has reduced intelligibility. Parents/teachers concerned; no associated medical conditions e.g. CP; Cleft Lip and/or Palate

Diagnoses that can co-occur:

Delayed phonological awareness **AND/OR** Articulation disorder **AND**Phonological delay **OR** Consistent phonological disorder **OR** Inconsistent phonological disorder. In rare cases: Dysarthria AND CAS e.g. Worster Drought

Assessment: single words; connected speech; oro-motor; articulation/stimulability; phonetic & phonemic inventory; phonological processes; phonological awareness (syllable and phoneme level); inconsistency (multiple productions of same word).

Overarching diagnostic term: Speech Sound Disorder SSD of unknown origin Phonological errors/error patterns noted in single words and/or connected speech noted in (Suspected) motor or phonemic inventory & error pattern analysis. Unusual error Distortions of neuromuscular IPD/DVD/CAS ruled out 40% or more patterns, oro-motor, Phonological individual sounds in disorder with oroinconsistent word words and in prosody etc., meets awareness not age motor involvement production (DEAP) isolation (nonappropriate, and/or Persisting strict DVD/CAS criteria **Atypical** Age stimulable) noted in continued difficulty at and DVD/CAS typical error error appropriate phonetic inventory syllable level ruled out patterns patterns Dysarthria Childhood Apraxia of Discharge & Inconsistent Phonological Consistent Speech (CAS)* Articulation Intervention choice is advice Phonological Delayed phonological delay phonological disorder complex. See up to date Disorder (IPD) disorder awareness (PA) literature in this area Delayed PA ReST (Rapid Syllable Transition (e.g. Ballard, Phonological Contrast intervention, 2001)); Integrated Phonological Awareness Articulation **Phonological** Core Review/ watchful in appropriate format to meet needs Intervention (e.g. Moriarty & Gillon, 2006); intervention, of child, detailed analysis needed to awareness Vocabulary waiting (age/policy Nuffield Dyspraxia Programme 3 (NDP3, single sound→ intervention Intervention dependant) derive target phonemes Williams & Stephens, 2004) CV, VC, CVC etc

Decision making tree for speech sound disorder version 5.1 September 2019 If you use this Decision Making Tree please credit Dr Helen Stringer, Newcastle University, with authorship. Enquiries: Helen.stringer@ncl.ac.uk

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*CAS is often referred to as developmental verbal dyspraxia (DVD) in the UK. CAS is the most common term globally.

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Bibliography

ASHA. (2007a). Childhood Apraxia of Speech [Position Statement]. Retrieved from www.asha.org/policy.

ASHA. (2007b). Childhood Apraxia of Speech [Technical Report]. Retrieved from www.asha.org/policy

Baker, E., & McLeod, S. (2011). Evidence-Based Practice for Children With Speech Sound Disorders: Part 1 Narrative Review. *Lang Speech Hear Serv Sch, 42*(2), 102-139. doi:10.1044/0161-1461(2010/09-0075)

Baker, E., & McLeod, S. (2011). Evidence-Based Practice for Children With Speech Sound Disorders: Part 2 Application to Clinical Practice. *Lang Speech Hear Serv Sch,* 42(2), 140-151. doi:10.1044/0161-1461(2010/10-0023)

Ballard, K. J. (2001). Response generalization in apraxia of speech treatments: taking another look. *Journal of Communication Disorders*, *34*(1), 3-20. doi:https://doi.org/10.1016/S0021-9924(00)00038-1

Child Speech Disorder Research Network. (2017). Good Practice Guidelines for Transcription of Children's Speech Samples in Clinical Practice and Research.

Retrieved from London, UK: https://www.nbt.nhs.uk/sites/default/files/BSLTRU Good%20practice%20guidelines Transcription 2Ed 2017.pdf

Child Speech Disorder Research Network. (2017). Good Practice Guidelines for the Analysis of Child Speech Retrieved from https://www.nbt.nhs.uk/sites/default/files/BSLTRU Guidelines%20for%20Analysis%20of%20Child%20Speech%20Data%20FINAL%20v2%20Oct%202017.pdf

Crosbie, S., Holm, A., & Dodd, B. (2009). Cognitive flexibility in children with and without speech disorder. *Child Language Teaching and Therapy, 25*(2), 250-270. doi:10.1177/0265659009102990

Child Speech Disorder Research Network (2017) *Good practice guidelines for transcription of children's speech in clinical practice and research.* Published on RCSLT members webpage (www.rcslt.org) and Bristol Speech and Language Therapy Research Unit webpage (www.speech-therapy.org.uk).

Child Speech Disorder Research Network (2017) *Good practice guidelines for the analysis of child speech.* Published on RCSLT members' webpage (www.rcslt.org) and Bristol Speech and Language Therapy Research Unit webpage (www.speech-therapy.org.uk).

Dodd, B. (2014). Differential Diagnosis of Pediatric Speech Sound Disorder. Current Developmental Disorders Reports, 1-8. doi:10.1007/s40474-014-0017-3

Dodd, B., Holm, A., Crosbie, S., & McIntosh, B. (2006). A core vocabulary approach for management of inconsistent speech disorder. *International Journal of Speech-Language Pathology*, 8(3), 220 - 230. doi:doi:10.1080/14417040600738177

Decision making tree for children with speech sound disorder (SSD)

Dodd, B., Hua, Z., Crosbie, S., Holm, A., & Ozanne, A. (2002). *Diagnostic Evaluation of Articulation and Phonology*: The Psychological Corporation.

Moriarty, B. C., & Gillon, G. T. (2006). Phonological awareness intervention for children with childhood apraxia of speech. *International Journal of Language & Communication Disorders*, 41(6), 713-734. doi:doi:10.1080/13682820600623960

Murray, E., McCabe, P., & Ballard, K. J. (2014). A Systematic Review of Treatment Outcomes for Children With Childhood Apraxia of Speech. *American Journal of Speech-Language Pathology*, 23(3), 486-504. doi:10.1044/2014_AJSLP-13-0035

Murray, E., McCabe, P., & Ballard, K. J. (2015). A Randomized Controlled Trial for Children With Childhood Apraxia of Speech Comparing Rapid Syllable Transition Treatment and the Nuffield Dyspraxia Programme—Third Edition. *Journal of Speech, Language, and Hearing Research, 58*(3), 669-686. doi:10.1044/2015_JSLHR-S-13-0179

Royal College of Speech and Language Therapists (RCSLT). (2011). *Developmental Verbal Dyspraxia RCSLT Policy Statement*. Retrieved from London: https://www.rcslt.org/members/publications/dvd_policy_statement

Stringer, H. (2017). *The Newcastle Assessment of Phonological Awareness (NAPA)* (Third ed.). Newcastle upon Tyne, UK: Newcastle University, School of Education, Communication and Language Sciences.

Stringer, H. (2017). *The Newcastle Intervention for Phonological Awareness (NIPA)* (Third ed.). Newcastle upon Tyne, UK: Newcastle University, School of Education, Communication and Language Sciences.

Waring, R., & Knight, R. (2013). How should children with speech sound disorders be classified? A review and critical evaluation of current classification systems. *International Journal of Language & Communication Disorders*, 48(1), 25-40. doi:10.1111/j.1460-6984.2012.00195.x

Williams, P., & Stephens, H. (2004). *The Therapy Manual of The Nuffield Centre Dyspraxia Programme, 3rd Edition.* (3rd ed.). London: The Nuffield Centre Dyspraxia Programme Ltd.

Wren, Y., Harding, S., Goldbart, J., & Roulstone, S. (2018). A systematic review and classification of interventions for speech-sound disorder in preschool children. *International Journal of Language & Communication Disorders*, 53(3), 446-467. doi:10.1111/1460-6984.12371