**Supplemental Digital Content**

**Appendix 1: Development of Classification System for Medical complexity relating to tube-weaning.**

The impact of co-existing medical conditions proved challenging to categorise as the sum of individual medical conditions does not necessarily equate to a ‘larger problem’ and equally, one medical condition may have a more significant impact on feeding ability and behaviours than another. In order to be able to quantify in some way the perceived complexity of a child’s medical condition with regard to how it would influence the child’s ability to wean from their feeding tube, three clinicians who were independent from the project, experienced in tube weaning (at least 10 years feeding experience each) and from a variety of allied health disciplines (Speech Pathology, Dietetics and Infant Mental Health) participated as independent raters.

Each rater was given a list of medical conditions that the children included in this study presented with, as identified from their medical records. Each rater then independently gave a rating of 1 – 3 points to each medical condition, based on how, in their clinical experience, each condition would impact on the tube weaning process. Majority consensus was used to resolve any discrepancies in scores between raters.

PERCEIVED IMPACT OF MEDICAL CONDITIONS ON WEANING OUTCOMES

Rating Scale:

1 – least impact on weaning (ie. easiest to wean)

2 – moderate impact on weaning

3 – severe impact on weaning (hardest to wean)

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|  | Mild (1) | Moderate (2) | Severe (3) | **Consensus** |
| **Chromosomal disorder** | **√ √** | **√** |  | **1** |
| **Congenital heart disease** | **√** | **√ √** |  | **2** |
| **Respiratory complications** |  | **√ √ √** |  | **2** |
| **Malformation/disease of GI tract** |  |  | **√ √ √** | **3** |
| **Food allergies** | **√** | **√ √** |  | **2** |
| **Neurological disorder** |  | **√ √** | **√** | **2** |
| **Oncology** | **√ √** | **√** |  | **1** |
| **Congenital metabolic conditions** |  | **√ √** | **√** | **2** |

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| These scores where then assigned to each child, based on their cluster of medical conditions. For example if Child A had a chromosomal disorder (score 1) + malformation/disease of GI tract (score 3) + respiratory complications (score 2) + food allergies (score 2) they would be assigned a score of 8 (see table below for all combinations based on this data set). Children with no remaining organic reason for tube feeding, but still fed via a tube, were assigned a 0 rating for the purpose of this rating scale. |
| |  |  | | --- | --- | | **Combinations of Medical Conditions children presented with.**  Note – some children had the same cluster of conditions and therefore 62 cases are not presented. | **Weighted score** | | Chromosomal disorder + congenital heart disease + respiratory complications | 5  (1+2+2) | | Medically healthy / no significant medical history | 0 | | Chromosomal disorder +malformation/disease of GI tract +respiratory complications + food allergies | 8  (1+3+2+2) | | Chromosomal disorder + congenital heart disease + food allergies | 5  (1+2+2) | | Neurological disorder | 2 | | Chromosomal disorder + food allergies | 3  (1+2) | | Oncology | 1 | | Respiratory complications | 2 | | Neurological disorder + chromosomal disorder +malformation/disease of GI tract + congenital heart disease +respiratory complications + food allergies | 12  (2+1+3+2+2+2) | | Congenital heart condition + respiratory complications | 4  (2+2) | | Congenital heart condition + respiratory complications + chromosomal disorder | 5  (2+2+1) | | Congenital heart condition + respiratory complications + malformation/disease of GI tract | 7  (2+2+3) | | Congenital heart disease | 2 | | Chromosomal disorder + malformation/disease of GI tract + Congenital heart condition + respiratory complications | 8  (1+3+2+2) | | Chromosomal disorder + respiratory complications | 3  (1+2) | | Chromosomal disorder + congenital heart disease | 3  (1+2) | | Chromosomal disorder + congenital metabolic conditions + congenital heart disease | 5  (1+2+2) | | Chromosomal disorder | 1 | | Neurological disorder + congenital heart disease | 4  (2+2) | | Chromosomal disorder + Congenital heart condition + respiratory complications | 5  (1+2+2) | | malformation/disease of GI tract | 3 | | Chromosomal disorder + malformation/disease of GI tract + congenital heart disease | 6  (1+3+2) | | Neurological condition + chromosomal disorder + respiratory complications | 5  (2+1+2) | | Neurological disorder + chromosomal disorder + malformation/disease of GI tract + congenital heart disease | 8  (2+1+3+2) | | malformation/disease of GI tract + congenital heart disease | 5  (3+2) | | chromosomal disorder + malformation/disease of GI tract + congenital heart disease + respiratory complications | 8  (1+3+2+2) | | Neurological disorder + chromosomal disorder + respiratory complications | 5  (2+1+2) | | Neurological disorder + chromosomal disorder + food allergies | 5  (2+1+2) | | Malformation/disease of GI tract + congenital heart condition + food allergies | 7  (3+2+2) | | Neurological disorder + respiratory complications | 4  (2+2) | | chromosomal disorder + congenital metabolic conditions + congenital heart disease | 5  (1+2+2) | | chromosomal disorder + congenital heart disease + food allergies | 5  (1+2+2) | | chromosomal disorder+ malformation/disease of GI tract | 4  (1+3) | | chromosomal disorder + congenital heart disease + respiratory complications | 5  (1+2+2) | | malformation/disease of GI tract + congenital heart disease + respiratory complications | 7  (3+2+2) | | Congenital metabolic conditions | 2 | | Chromosomal disorder + malformation/disease of GI tract + respiratory complications | 6  (1+3+2) |   Final weighted scores ranged from 0 – 12. In an attempt to dichotomise the perceived medical complexity levels due to small numbers in each of the weighted score categories and due to the exploratory nature of this analysis, we grouped all children assigned complexity scores of 0, 1, 2 and 3 (n= 32) into a “mild impact on weaning” group and all children assigned complexity scores 4 and above (n=30) into a “moderate to severe impact on weaning” group. This was undertaken in an attempt to capture the complexity of the influence of medical conditions in a regression model that is acknowledged to be limited by a small participant sample.  During statistical analysis these groups were then collapsed into two final categories ‘ easy’ and ‘hard’ to wean, as per the regression analysis. |