OBJECTIVE
This study explores the relationship between (i) functional classifications systems typically used in cerebral palsy (CP) to describe children’s motor function, manual and communication ability, and (ii) an impairment-based movement disorder rating scale (BFM-M) when applied to children with dystonia and other hyperkinetic movement disorders (HMD).

BACKGROUND
Hyperkinetic movement disorders can be assessed using impairment-based scales or functional profiles. Impairment is often assessed using the Burke-Fahn-Marsden Dystonia Rating Scale-Motor (BFM-M) when evaluating dystonic cerebral palsy (CP), but may not reflect functional ability. Functional assessments reflect the burden of difficulty of life with a motor disorder.

The Gross Motor Function Classification System (GMFCS), Manual Ability Classification System (MACS) and Communication Function Classification System (CFCS) have been adopted in the paediatric CP literature.

METHODS
161 children with dystonic motor disorders were assessed using these BFM-M and GMFCS, MACS and CFCS scales between 2007 and 2013. The information provided by these scales is compared and contrasted.

RESULTS
All scales are closely linked (p<0.00001 for all comparisons), with worse dystonia severity implying worse function and vice versa.

Secondary dystonias tend to have more severe dystonia and worse function than primary dystonia (p<0.00001).

The relationship between BFM-M and GMFCS is roughly linear, with median BFM-M values for each GMFCS level of 24, 48, 62, 82, and 102, respectively. Both MACS and CFCS display non-linear relationships with BFM-M: MACS shows a super-linear relationship with little difference between the lower MACS levels giving medians for levels I-V of 12, 38, 41, 76, and 102, respectively.

CONCLUSION
The BFM-M is strongly linked with the GMFCS, MACS and CFCS, irrespective of aetiology of dystonia. Each scale offers interrelated, but complementary information and was applicable to all aetiologies of dystonia.

‘Rosetta stone’ of scales allowing the cross-interpretation of these interdependent scales and the BFMDRS.