1. Storyboard title

Handwriting Motorway

2. Brief outline of context

- The Handwriting Motorway
  - a collaboration between Children’s Occupational Therapy Service (OT), UHB and Schools and Lifelong Learning (LLT) from Cardiff Local Authority
  - Rolled out of the programme to all Cardiff Primary Schools will be completed by May 2013; schools receiving joint training and coaching to implement the programme.
  - encourages a whole school approach to motor skill development
  - enables schools to support children with developmental delays and motor difficulties to make progress without the need to refer into the specialist services such as OT

3. Brief outline of problem

The OT Service is a specialist service for children and young people living in Cardiff and Vale. Historically we have received high numbers of referrals for children with handwriting concerns associated with motor co-ordination difficulty. This referral trend has been mirrored within the LTT who have dealt with children who cannot record their knowledge by writing. Both services have, in the past, operated separately leading to duplication and confusion on the part of teachers/parents as to which service would manage the needs.

In 2007 it became apparent to both services that confusion existed regarding roles and responsibilities relating to tackling handwriting difficulties and the problem needed to be resolved.

4. Assessment of problem and analysis of causes

Year on year increase referral demand for OT assessment was leading to long waiting times. An audit in 2007 highlighted that a high proportion of referrals identified handwriting as a major concern. A survey of special needs teachers in primary schools was undertaken to identify their skills in management of handwriting difficulties. This survey identified that over 80% of respondents felt ill equipped to deal with this issue and would benefit from further training. Parental complaints were being received by both the OT and LLT services regarding the lack of specialist input to their child; neither service having the resource to offer more input.

The traditional model of clinic assessment and advice to schools was not therefore an effective way of managing increasing referral rate as schools did not have the capacity to implement advice. Additionally research evidence highlighted that intervention in context of where the child will use the skill ensure best outcomes, indicating that school lead intervention would be most effective. Combining the resources of both services would go towards management of that demand and it was agreed that increasing schools capacity to support children’s handwriting and motor skills across the whole pupil population and giving schools a means to identify problems and intervene in the classroom would be the most effective way to develop a sustainable solution.
5. Strategy for change

A coordinated approach was adopted early in 2008 and a working party was established consisting of representatives from OTs, Specialist Teachers and Educational Psychologists. Additional funding was secured from the Welsh Government Joint Working Grant. A literature review was undertaken to identify evidence-based guidance. Collaborative resources were developed including:

- Information on the normative development of motor skills and it's importance in handwriting development
- Choosing/developing a whole school handwriting policy
- Graded responses 1-4 outlining Local Authority, Health and school roles/responsibilities
- Motor skills checklists
- Motor skills programmes/ resources

Informal feedback from both therapy and teaching staff was very positive and a ‘good practice guide’ was drafted.

A formal pilot of the guide was carried out in 4 primary schools from a mixed demographic across the Cardiff. The reported improvements of children's functional skills and feedback from teachers were very positive. The drafted practice guide was updated and re-named **Handwriting Motorway**.

It was then agreed that jointly the OT and LLT service would teach every Cardiff Primary School in the use of the **Handwriting Motorway**. Teaching commenced in the spring term 2011 and will be completed by May 2013.

6. Measurement of improvement

Formal validation of the programme has not been possible although has been explored with Cardiff University - Department of Occupational Therapy Education. An application for research funding was unfortunately unsuccessful.

Pre and post teacher questionnaires are now being used to capture the change in teacher's knowledge and capacity to manage handwriting development. In addition pupil outcomes are captured from the change in pre and post motor skills programme checklist scores administered by their teacher’s. These show improvement in postural/motor control, hand skills and handwriting skills. Anecdotal evidence from teaching staff is very positive showing impact on functional sitting skills, pencil skills and hand skills. There are also some excellent examples of improvement in handwriting size and fluency

7. Effects of changes

The **Handwriting Motorway** has been ratified by Cardiff Local Authority as one of the approaches required for implementation by schools as part of the graduated educational response to handwriting concerns. Schools need to collect evidence through the programme to support access to specialist services. The OT service has seen fewer referrals for children with handwriting concerns. Where these children do meet the service access threshold they can be assessed and discharged with specific advise to use part/whole of the **Handwriting Motorway**

Roles and responsibilities of OT and LLT are clearers to teachers and parents. A common language has been developed, reducing parental confusion and complaint
The coaching model enables schools who were initially reluctant to embrace this approach to implemented it in a more sustainable manner. Most schools have adopted a continuous classroom provision approach within the foundation phase reinforcing links to legislation, incorporating the graded approach and the programme into their school routine.

This collaboration between health and education has proven to be very successful and is being considered for other areas of joint concern such as management of children’s sensory processing concerns within the classroom.

8. Lessons learnt
Both services have received positive response and feedback from teachers, parents and children such as thank you cards, emails, and verbal compliments. We have learnt that working collaboratively across historical boundaries and sharing our scarce resources has enabled positive outcomes for children who now are less likely to be medicalised as having a developmental delay requiring ‘therapy’ as the issues are addressed within their normal school day.

9. Message for others

The availability of the programme has been spread by word of mouth and also reported in the Journal of Occupational Therapy – Special Interest Group for Children, Young People and Families. This has lead to enquiries from other clinics and local authority areas as to accessing the training and the implementation team are currently looking to sell the training. This will consolidate access to the Good Practice Guide as well as ensure an income to support more formal research into the validity and efficacy of the programme.

(1098 words)

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