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Knowledge translation intervention to improve evidence-based practice behaviour of allied health professionals: A cluster randomised controlled trial and 2-year follow-up study

Lanie Campbell
University of Notre Dame Australia

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APPENDIX 1
Oxford Centre for Evidence-based Medicine

Brief description prepared by Bob Phillips.

Background

The Oxford Centre for Evidence-based Medicine (OCEBM) Levels of Evidence and Grades of Recommendation 1999 [1] were developed in response to a need for assessment of evidence beyond therapeutic interventions. They are an evolution of the Canadian Task Force on the Periodic Health Examination grading system of 1979. The development of the Oxford Levels of Evidence was in response to the writing of a series of guidelines for junior medical staff, the "Evidence-based On Call" project. They cover many aspects of the medical management of patients, including causation and diagnosis as well as therapeutic interventions.

Quality of evidence

The levels of evidence are derived from a matrix which has four axes, corresponding to the broad type of clinical question under consideration. These are "interventions/aetiology", "prognosis", "diagnosis" and "economic analysis". Each of these axes is divided into 5 broad levels of evidence, ranked from 1 (least potential bias) to 5 (most potential bias). The level allocation is primarily dependent on study design factors (e.g. randomisation in interventions, or independent reference standards for diagnosis). Other factors include outcome assessment (e.g. 'minus' when a result is too imprecise) and clinical sensibility (e.g. 'appropriate spectrum' of patients in diagnostic tests). See http://cebm.jr2.ox.ac.uk/docs/levels.htm

Strength of recommendations

The grade of recommendation is a compression of the 10 'levels' into 4 'grades', without any added deliberation or assessment. Level 1a to 1c studies give
grade A recommendations; 2a to 3b map to grade B; level 4 studies are grade C and level 5 or imprecise ('minus' level) studies give a grade D recommendation.

**Strengths and weaknesses**

The strengths of the OCEBM approach are in the detailed development of the levels of evidence. The different axes allow for questions related to diagnosis, aetiology and prognosis to be considered as 'evidence-based' as well as traditionally intervention-orientated recommendations. Another strength is in the partial incorporation of aspects of heterogeneity into the grade of recommendation. The detailed description of the study levels, and their objectivity, make reproducibility likely to be high. However, this detail may introduce problems for inexperienced users. A study estimating inter-tester reliability has been performed in the Oxford CEBM, and is under analysis (Personal Communication: RSP).

The weakness of the OCEBM approach can be summarised as the simplistic translation of level of evidence into grade of recommendation. No assessment is made of the clinical importance of the outcomes under consideration. There is no way of balancing of benefits or harms, nor assessment of applicability of the studies. There is no clear way of compiling the body of evidence (often of separate levels) into a single grade of recommendation, or differentiation of direct or indirect evidence.

**Target audiences**

The OCEBM levels of evidence and grades of recommendation are intended to be used by clinicians in practice. This approach is not intended for use by consumers or policy makers.
Guidelines made with the use of this approach

The OCEBM approach has been used most extensively by "Evidence-based On Call" to produce 37 guidelines in general (internal) acute medicine [2,3]. This project develops guidelines which are focussed currently on the needs of the postgraduate trainee clinician. The process is of systematic search of the literature, critical abstraction, explicit allocation of a level of evidence and summary into a guideline, with each statement given a summary grade of recommendation. All aspects of management, from initial presentation, diagnosis, investigation, treatment and prognostication are included in the guides.

The "Evidence-based On Call" internet system has recently been adopted by the UK National Health Service National electronic Library of Health (NeLH) [4]. An evaluation of user feedback and utilisation is planned.

Within the field of the project (guidelines in general acute medicine), the homogeneity of the clinical environment and the secondary or tertiary nature of most evidence used, ironed out some of the possible problems. Using the OCEBM approach at a different level in the health care system (e.g. primary care, where different populations are cared for) or across disciplines (e.g. with physiotherapists, when different training and structures are present) may be difficult. We are not aware of any group that has used the OCEBM grading system outside hospital medical practice.

Studies evaluating the application of guidelines made with this approach

Formal evaluations completed:
None to date.

Formal evaluations underway or planned:
The NeLH evaluation may include aspects of audit against selected "Evidence-based On Call" guidelines.
Informal evaluations:

Focus groups used during the development of the 'Evidence-based On Call' project demonstrated a desire for such information. A number of clinicians working with the developers of the "Evidence-based On Call" guidelines believed their practice had been altered by the information presented.

References

1. http://cebm.jr2.ox.ac.uk/docs/levels.html

2. http://www.eboncall.co.uk


<table>
<thead>
<tr>
<th>Grade of Recommendation</th>
<th>Level of Evidence</th>
<th>Therapy/Prevention, Aetiology/Harm</th>
<th>Prognosis</th>
<th>Diagnosis</th>
<th>Economic analysis</th>
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<tbody>
<tr>
<td>A</td>
<td>1a</td>
<td>SR (with homogeneity) of RCTs</td>
<td>SR (with homogeneity) of inception cohort studies; or a CPG validated on a test set</td>
<td>SR (with homogeneity) of Level 1 diagnostic studies; or a CPG validated on a test set</td>
<td>SR (with homogeneity) of Level 1 economic studies</td>
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<td></td>
<td>1b</td>
<td>Individual RCT (with narrow Confidence Interval)</td>
<td>Individual inception cohort study with ≥ 80% follow-up</td>
<td>Independent blind comparison of an appropriate spectrum of consecutive patients, all of whom have undergone both the diagnostic test and the reference standard</td>
<td>Analysis comparing all (critically-validated) alternative outcomes against appropriate cost measurement, and including a sensitivity analysis incorporating clinically sensible variations in important variables</td>
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<td></td>
<td>1c</td>
<td>All or none</td>
<td>All or none case-series</td>
<td>Absolute SpPins and SnNouts</td>
<td>Clearly as good or better, but cheaper. Clearly as bad or worse but more expensive. Clearly better or worse at the same cost.</td>
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<td>B</td>
<td>2a</td>
<td>SR (with homogeneity) of cohort studies</td>
<td>SR (with homogeneity) of either retrospective cohort studies or untreated control groups in RCTs</td>
<td>SR (with homogeneity) of Level ≥2 diagnostic studies</td>
<td>SR (with homogeneity) of Level ≥2 economic studies</td>
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</tbody>
</table>
|                          | 2b               | Individual cohort study (including low quality RCT; e.g., <80% follow-up) | Retrospective cohort study or follow-up of untreated control patients in an RCT; or CPG not validated in a test set | Any of:  
  - Independent blind or objective comparison  
  - Study performed in a set of non-consecutive patients, or confined to a narrow spectrum of study individuals (or both) all of | Analysis comparing a limited number of alternative outcomes against appropriate cost measurement, and including a sensitivity analysis incorporating clinically sensible variations in important variables |
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<td>“Outcomes” Research</td>
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<tr>
<td>B</td>
<td>3a</td>
<td>SR (with homogeneity) of case-control studies</td>
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<td>Independent blind comparison of an appropriate spectrum, but the reference standard was not applied to all study patients</td>
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<tr>
<td></td>
<td>3b</td>
<td>Individual Case-Control Study</td>
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<td>Analysis with no sensitivity analysis</td>
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<td>C</td>
<td>4</td>
<td>Case-series (and poor quality cohort and case-control studies)</td>
<td>Case-series (and poor quality prognostic cohort studies)</td>
<td>Any of:</td>
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<td>• Reference standard was unobjective, unblinded or not independent</td>
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<td>• Positive and negative tests were verified using separate reference standards</td>
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<td>• Study was performed in an inappropriate spectrum of patients.</td>
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<tr>
<td>D</td>
<td>5</td>
<td>Expert opinion without explicit critical appraisal, or based on physiology, bench research or</td>
<td>Expert opinion without explicit critical appraisal, or based on physiology,</td>
<td>Expert opinion without explicit critical appraisal, or based on physiology, bench research or</td>
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</tbody>
</table>
### Appendix 1 – Oxford Centre for Evidence-based Medicine

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level of Evidence</td>
<td>Physiology, bench research or “first principles”</td>
<td>Bench research or “first principles”</td>
<td>“first principles”</td>
<td>Economic theory</td>
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</tbody>
</table>

i. By homogeneity we mean a systematic review that is free of worrisome variations (heterogeneity) in the directions and degrees of results between individual studies. Not all systematic reviews with statistically significant heterogeneity need be worrisome, and not all worrisome heterogeneity need be statistically significant. As noted above, studies displaying worrisome heterogeneity should be tagged with a “-” at the end of their designated level.

ii. Clinical Prediction Guide.

iii. See note #2 for advice on how to understand, rate and use trials or other studies with wide confidence intervals.

iv. Met when all patients died before the Rx became available, but some now survive on it; or when some patients died before the Rx became available, but none now die on it.

v. Met when there are no reports of anyone with this condition ever avoiding (all) or suffering from (none) a particular outcome (such as death).

vi. An “Absolute SpPin” is a diagnostic finding whose Specificity is so high that a Positive result rules-in the diagnosis. An “Absolute SnNout” is a diagnostic finding whose Sensitivity is so high that a Negative result rules-out the diagnosis.

vii. Good, better, bad, and worse refer to the comparisons between treatments in terms of their clinical risks and benefits.

viii. By poor quality cohort study we mean one that failed to clearly defined comparison groups and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both exposed and non-exposed individuals and/or failed to identify or appropriately control known confounders and/or failed to carry out a sufficiently long and complete follow-up of patients. By poor quality case-control study we mean one that failed to clearly define comparison groups and/or failed to measure exposures and outcomes in the same blinded, objective way in both cases and controls and/or failed to identify or appropriately control known confounders.

ix. By poor quality prognostic cohort study we mean one in which sampling was biased in favour of patients who already had the target outcome, or the measurement of outcomes was accomplished in <80% of study patients, or outcomes were determined in an unblinded, non-objective way, or there was no correction for confounding factors.

**Notes:**

1. These levels were generated in a series of iterations among members of the NHS R&D Centre for Evidence-Based Medicine (Chris Ball, Dave Sackett, Bob Phillips, Brian Haynes, and Sharon Straus).

2. Recommendations based on this approach apply to “average” patients and may need to be modified in light of an individual patient’s unique biology (risk, responsiveness, etc.) and preferences about the care they receive.

3. Users can add a minus-sign “-” to denote the level of that fails to provide a conclusive answer because of:
a. EITHER a single result with a wide Confidence Interval (such that, for example, an ARR in an RCT is not statistically significant but whose confidence intervals fail to exclude clinically important benefit or harm)

b. OR an SR with troublesome (and statistically significant) heterogeneity.

c. Such evidence is inconclusive, and therefore can only generate Grade D recommendations.

Abbreviations:
SR – Systematic review
RCT – Randomised Controlled Clinical Trial
CPG – Clinical Prediction Guide
ARR – Absolute Risk Reduction
Rx – Prescription
APPENDIX 2
National Ethics Application approval letters

9 September 2009
Ms Lanie Campbell
CP Institute
P O Box 644
Darlinghurst NSW 2010

Dear Ms Campbell,

I am writing to you in regard to your NEAF Application for Ethical Clearance for your proposed research project to be undertaken as a staff research project at the University of Notre Dame Australia.

The title of this project is: "Effectiveness of Providing Communication Skills Training and Evidence Based Practice Training for Chaning Health Professionals Clinical Decision Making and Outcomes of Care".

I am pleased to advise that your proposal has been reviewed by the University's Human Research Ethics Committee and approval has been endorsed conditional on addressing the following:

- Researcher to include missing signature of Research on page 25

Please can you respond to the above by emailing Lorraine Mayhew at lmayhew@nd.edu.au by Friday 25 September, 2009. Failure to respond could result in a suspension of the approval of ethics clearance. Should the design of the study, the choice of instrument, or its manner of administration be altered in any significant way as the study progresses, you will be required to provide an update of your clearance application for fresh consideration by the University.

On behalf of the University and the Human Research Ethics Committee, I wish you well with what promises to be a most interesting and valuable study.

Yours sincerely,

[Signature]

Lorraine Mayhew
Executive Officer; Human Research Ethic Committee
Research Office

cc. A/Professor Victor Nossar Acting Dean, School of Medicine, Sydney
Professor George Mendz, School of Medicine, Sydney
Dear Ms Campbell

8th May 2012

Re: Effectiveness of providing communication skills training and evidence based practice training for changing health professionals clinical decision making and outcomes of care

Cerebral Palsy Alliance (formerly The Spastic Centre) Ethics Committee reviewed and approved your research application as above on 6th May 2009.

Unfortunately, the Ethics Committee has not received a report from your project’s Chief Investigator and I write to remind you that your last report was due on 1st May 2010.

I refer you to your original approval letter which outlined that under the 2007 National Statement for HREC’s, your ethics approval was granted on the condition of you agreeing to:

- Provide a summary of your progress on a yearly basis to the committee. A final report on completion and notification of any publications from this project is also requested. Failure to submit required reports will result in withdrawal of consent for the project to continue.

The Ethics Committee has noted with some disappointment your delay in responding to this obligation. If there has been any change in circumstances regarding your project with respect to its discontinuation or if you require an extension of ethics approval should your project not be completed within the time period specified in your approval letter, please advise us immediately.

If this however does not apply, the Ethics Committee requests that you provide a copy of a progress report by 8th June 2012 so that this can be tabled for the following Ethics Committee. Further delay may jeopardise the continued ethics approval.

Please do not hesitate to contact Deborah Hoffman, General Manager Strategy Research & Planning on (02) 9479 7223 if you wish to discuss any matter concerning this letter.

Yours sincerely

[Signature]

Andrew Buchanan
Chair, Ethics Committee
Member of the Board of Directors, Cerebral Palsy Alliance
Cerebral Palsy Alliance Ethics Committee is a NHMRC HREC: EC00402
APPENDIX 3
Evidence Alert System

Home page with four main sections – assessment, intervention, prognosis/prevalence and clinical algorithms. The following screenshots will show information within each of these sections.

Evidence Based Clinical Decision Making

The main aim of moving towards a model that encompasses evidence based decision making is for clients to be offered the best possible interventions for their individual situation. We have summarised the research findings in a number of areas relating to assessing and treating people with cerebral palsy. The information in this Evidence Based Clinical Decision Making section aims to provide a simple way to search the literature and appraise the evidence. You can search by word, for example ‘casting’, or you can browse through the 4 sections listed below.

Assessment
Intervention
Prognosis/Prevalence
Clinical Algorithms

What is Evidence Based Decision Making?

Evidence based decision making or evidence based practice (EBP) is the use of current best research evidence in making decisions about health care (Sackett et al, 2000). The essence of this thinking is that best available research evidence should be used to underpin clinical decision making to maximise health care outcomes for recipients of care (Stevenson et al, 2006).

Evidence based decision making can be thought of as an overlap between research findings, clinical expertise and client values. In this model, research findings are the major factor that influence clinical decisions. The following diagrams help illustrate these components of EBP.
Assessment

The assessment section includes goal setting, classification, outcome measure and assessment tools that are useful in clinical practice. There are a number of reasons to assess including wanting to diagnose, predict the course of a condition (prognosis) or measure change over time.

Contents

1 Useful definitions
   1.1 Norm referenced
   1.2 Criterion referenced
   1.3 Likert scale
2 Goal setting outcome measurement tools
3 Classification tools
4 Assessment Tools
5 Discriminative Assessment Tools
   5.1 Physiotherapy Assessment Tools
   5.2 Occupational Therapy
   5.3 Speech Pathology
   5.4 Psychology
   5.5 Others

Useful definitions

Norm referenced
Norm-referenced tests measure the performance of a person in relation to (compared with) a specific population (Spittle, 2008).

Criterion referenced
Criterion-referenced tests have criteria or a minimum competence that must be reached to score an item or pass the test. This compares the person’s performance with the test content, rather than a population (Spittle, 2008).
Assessment - Examples of types of assessments included

**Occupational Therapy**
- Assisting Hand Assessment
- Bruininks Oseretsky test of Motor Proficiency, second edition (BOT-2)
- Sensory Profile
- Computer Access Technology Options (COMPASS)
- Beery VMI
- Test of visual perceptual skills 3rd edition (TVPS-3)
- Evaluation tool of children’s handwriting-Manuscript (ETCH-M)
- Handwriting Speed Test

**Speech Pathology**
- Australian CELF-u (Clinical Evaluation of Language Fundamentals)
- Australian CELF-Preschool 2
- TACL-R (Test for auditory comprehension of language-revised)
- Renfrew Action Picture Test
- Preschool Language Scale (PLS-4)
- Photo Articulation Test (PAT-3)
- Goldman Fristoe Test of Articulation
- Reynell Developmental Language Scales III
- Triple C Assessment
- Hundred Pictures Naming Test
- Peabody Picture Vocabulary Test-III
- Bracken basic concept scale (BBCS-3:R)

**Psychology**
Assessment - Example of an assessment that an occupational therapist might use

Bruininks Oseretsky test of Motor Proficiency, second edition (BOT-2)

Purpose/Description
Measures 53 gross and fine motor skills across 8 subtests (fine motor precision, fine motor integration, manual dexterity, bilateral coordination, balance, running speed and agility, upper limb coordination and strength). Norm referenced.

Population
- People aged 4 – 21 years

Go back to Assessment page
Go back to Evidence Based Clinical Decision Making

Categories: Evidence Based Clinical Decision Making | Assessment
Intervention index page (p 1/2) (listed alphabetically: A through to M) - all interventions that have been rated are listed here

- Alternative and Complementary Approaches
- Augmentative and Alternative Communication
- Behaviour (Positive Support)
- Biofeedback
- Botulinum Toxin A
- Casting
- Conductive Education
- Context Therapy
- Communication Training
- Constraint Induced Movement Therapy (CIMT)
- Cognitive Orientation to Daily Occupational Performance (CO-OP)
- Dysarthria therapy
- Dysphagia - postural and diet modification
- Dysphagia - Gastrorrhaphy
- Early Intervention
- Electrical Stimulation (NMES & FES)
- Equipment and Assistive Technology
- Exercise
- Functional Training
- Fundoplication
- Gait Training
- Goal Directed Training (GDT)
- HABIT
- Handwriting Training
- Hippotherapy
- Home Programs
- Hydrotherapy/Aquatic Therapy
- Hyperbaric Oxygen
- Intrathecal Baclofen
- Literacy Interventions
- Massage
Intervention index page (p 2/2) (alphabetically: M through to W) – all interventions that have been rated are listed here

- Massage
- Neurodevelopmental Therapy
- Occupational Therapy
- Oral Motor Treatment
- Parent Education
- Phonological Awareness and Articulation Therapy
- Physiotherapy
- Play Therapy
- Pragmatics
- Seating
- Sensory Integration
- Speech and Language Therapy (general)
- Splinting and Orthotics
- Solution-focused brief therapy (SFBT)
- Strength Training
- Stretching/Range of Motion Exercises
- Surgical Interventions
- Training, Information Sharing and Support
- Treadmill Training
- Weight Bearing Exercise
- Whole Body Vibration

Go back to Evidence Based Clinical Decision Making

Category: Evidence Based Clinical Decision Making
Intervention - Example of an intervention (Botulinum Toxin A) (p 1/2)

Aim

Use injections of botulinum toxin to provide a short-term reduction to spasticity in muscles, providing potential opportunity to develop motor skills or facilitate care. Therapy often used in conjunction with Botulinum Toxin A to improve outcomes.

Level of Evidence

There is strong evidence that Botulinum Toxin A reduces spasticity in the following areas: paediatric upper limb, paediatric lower limb, adult upper limb, adult lower limb.

There is strong evidence that Botulinum Toxin A increases function in the following areas: paediatric upper limb, paediatric lower limb.

There is low level published research evidence supporting the effectiveness of Botex to increase function for: adult lower limb and adult upper limb.

Action: Caution - use this intervention and measure its effectiveness using an outcome measure (COOPM or GAS).
Appendix 3 – Evidence Alert System

Intervention - Example of an intervention (Botulinum Toxin A) (p 2/2)

Relevant Articles

Background

Objective measurement of clinical findings in the use of botulinum toxin type A for the management of children with cerebral palsy

Roslyn N. Boyd and H. Kerr Graham, European Journal of Neurology Volume 6 Issue S4, 3-35

Clinicians use a range of clinical and objective measures to quantify the positive and negative features (impairments) of the upper motor neurone syndrome. These measures play an important role in the assessment and selection of suitable candidates for intervention and monitoring of outcome. Intervention strategies often focus on the positive features; however, outcome may be more contingent upon the severity of the negative features. The clinical protocol for patient selection and treatment used by our multidisciplinary team is presented, together with details of the assessment procedure. Measurement tools in routine use are described, including: the Modified Ashworth Scale, the Modified Tardieu Scale (‘R1’), muscle length by joint range of motion ‘R2’, three-dimensional gait analysis, assessments of strength by the Medical Research Council Scale, Selective Motor Control, the Gross Motor Function Measure and the Observational Gait Scale. Three case studies of children with cerebral palsy who underwent botulinum toxin type A treatment as part of their management of gait disorder are presented, a 2-year-old girl with mild hemiplegia (‘true equinus’), a 3-year-old boy with moderate hemiplegia (‘apparent equinus’) and a 6-year-old girl with diplegia, where a targeted approach was used to treat a distal problem and resulted in correction of a proximal problem.

Upper Limb

Repeat injection of botulinum toxin A is safe and effective for upper limb movement and function in children with cerebral palsy.


The efficacy of repeated botulinum toxin A (BTX-A) injections in two and three dose regimes, together with occupational therapy, on upper limb movement and function, was studied using an evaluator blinded, randomized, controlled two-group trial. Forty-two children (31 males, 11 females; range 2.8 y, mean 4 y [SD
Prognosis/Prevalence

Behaviour and Mental Health
Epilepsy
Hearing Impairment
Hips/Orthopaedic Deformity
Incontinence
Intellectual Disability/Cognitive Functioning
Motor Function
Pain
Quality of Life
Sleep
Speech and Swallowing
Upper Limb
Visual Impairment
Other - including life expectancy, epidemiology, descriptions

Go back to Evidence Based Clinical Decision Making

Category: Evidence Based Clinical Decision Making
Ambulatory Predictors

Predicting future ambulation influenced by:
- Motor milestones at 2 years (ability to roll, sit, or stand)
- Type of CP
- Blindness
- Sitting at 2yrs = strong walking predictor (ie 26x more likely to walk)
- Sitting independently at 2yrs but not pulling to stand =
- 50% chance of walking +/- support by 6yrs
- Sitting independently & pulling to stand at 2yrs =
- 76% chance of walking +/- support by 6yrs
- 40% chance of full ambulation by 14yrs
- Very few children who roll but not sit independently at 2yrs (GMFCS level IV) achieve full ambulation
- Of those who achieve full ambulation by 10yrs, 96% were walking with support by 6yrs

Follow the link to view Gross Motor Function curves.

Prognosis/Prevalence of Motor Function - Relevant Articles

Gross muscle morphology and structure in spastic cerebral palsy: a systematic review.


Aim: This systematic review and critical evaluation of the literature was conducted to determine how gross muscle morphology and structure are altered in individuals with spastic cerebral palsy (CP). Method: Electronic databases were searched for articles describing studies of muscle morphological and structural properties in individuals with spastic CP. Data describing muscle fascicle length, belly length, fascicle angle, cross-sectional area, volume, and thickness were extracted and effect sizes were computed for comparisons between individuals with spastic CP and typically developed individuals, between the paretic and non-paretic side in individuals with hemiplegia for all muscles examined, and across the full spectrum of gross motor function in
Clinical Algorithms

Clinical algorithms are also known as decision making trees. They are not meant to be prescriptive but rather assist you, the client, their family/carers and your team to make clinical decisions in a streamlined, consistent way. It also helps you to offer evidence based interventions to your clients resulting in the best possible outcomes.

The clinical algorithms are a work in progress, just like the rest of the wiki and we welcome comments and suggestions. Please email *Lanie Campbell*.

- Assistive Technology - Notetaker
- Assistive Technology - Switching
- Behaviour Management - Tantrums
- Botox - Lower Limb
- Botox - Upper Limb
- Cognitive Assessment
- Communication Assessment
- Communication - Non-verbal - Pre-Intentional
- Communication - Non-verbal - Intentional/Informal
- Communication - Non-verbal - Symbolic
- Communication - Verbal - Articulation
- Equipment
- Family Support
- Handwriting
- Mealtimes
- Motor Training
- Orthotics
- Seated Mobility
- Self Care
- Sleep
Appendix 3 – Evidence Alert System

Clinical Algorithms – example

Mealtime Management

- Consider referral to dietitian for nutritional plan
- Liaise with nurse &/or dietitian to write non oral feeding procedures
- Consider parent education

- Underweight, lost gained weight unexpectedly?
  - YES
  - NO
  - Monitor weight over time

- Non-oral nutrition?
  - YES
  - NO

- Assess oral intake
  - Physical assistance required to eat/drink?
    - YES
    - NO
    - SP/OT assessment of feeding skills
      - 1. Consider adaptive equipment
      - 2. Consider positioning strategies

- Assess assistive mealtime strategies
  - 1. Consider pace modification &/or bolus size
  - 2. Consider positioning strategies

- Coughing/gagging during meals?
  - YES
  - NO

- Full swallowing assessment complete?
  - NO
  - Mouth or teeth problems affecting
Evidence Based Decision-Making & Communication Skill Study

What is evidence based practice?
Evidence based practice (EBP) is the use of current best research evidence in making decisions about health care. Health professionals’ agree that EBP is the optimal approach to providing services. EBP compels health professionals to ask important clinical questions, to attain and interpret the findings, and most importantly integrate the answers into healthcare services to optimise clinical outcomes.

The benefits of adopting a systematic EBP approach to health care are multiple: (a) increasing both the effectiveness and efficiency of the services provided; (b) assisting allied health professionals to be more reflective and analytical, whilst remaining creative; (c) providing justification of the need for allied health interventions; and (d) enhancing the credibility of the professions.

Good communication between health professionals and clients/patients is essential for the delivery of high quality care (Fellowes et al, 2008) and for communicating research findings to health consumers. Research has shown that communication skills training programmes in oncology are effective for improving communication skills; (Fellowes et al, 2008; Gysels et al; 2005), however there little to no research of this topic area in the disability field.

What is the purpose of the study?
You are invited to participate in a research project about the impact of providing an evidence-based practice (EBP) library along with a one/two day workshop on clinical decision-making and outcomes of care. The training and all tasks associated with it are compulsory for Spastic Centre allied health and community links staff to attend. The research project component is voluntary and is no extra work on top of the training; you just submit your assessment tasks to the research team to be included in the study. All information that is included in the research study is de-identified. You will assign yourself a code name and the researchers will not be able to re-identify you.

There are 3 broad aims of this study.
1. To find out whether the EBP library along with training for 3 days (2 days initially and 1 day 8 weeks later) changes the clinical decisions that the participants (allied health staff) make before/after the training
2. To find out whether the EBP library along with training for 3 days changes client outcomes
Appendix 4 – Information Sheet for Staff Participants

Code Name:_____________________________________________________________

3. To find out whether the communication training for 3 days (2 days initially and 1 day 8 weeks later) changes the types of goals set for intervention and or changes the messages given to families before/after the training.

This project is being conducted by The Cerebral Palsy Institute. The research team includes: Lanie Campbell, Research Assistant; Dr Iona Novak, Head of Research; Sarah McIntyre, Research Fellow; Shona Goldsmith, Research Assistant; and Elise Stumbles, Manager of Professional Development.

What will you need to do?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Information</td>
<td>First we would make sure you are fully aware of what is involved in the study and ensure that you meet the criteria to be involved in the study.</td>
</tr>
<tr>
<td>2</td>
<td>Consent</td>
<td>We would then ask you to sign a consent which ensures you have read and understood the material provided about the study and that you are willing to participate. We would also ensure that you have a consent form signed from the client/s that you plan to work with during the project.</td>
</tr>
<tr>
<td>3</td>
<td>Baseline Assessment</td>
<td>At the commencement of the training sessions, time will be set aside to complete the baseline assessments. There are a range of assessments, these include: completing a clinical case scenario exam, a survey questionnaire, and a case study form. You will be able to use whatever resources you normally use at work to complete these types of tasks, e.g. client files, computer, books</td>
</tr>
<tr>
<td>4</td>
<td>Randomisation</td>
<td>Your regional office will be randomised to one of 2 groups, either: evidence decision-making training or advanced communication training. You will not get a choice which group you are randomised to, but you will get to participate in both groups. After you have finished one type of training then you will proceed to the other type of training.</td>
</tr>
</tbody>
</table>
| 5 | Training | Evidence-based decision-making
You will be provided with 2-days of workshop training on how to use an EBP library to assist you with decision making. 

Advanced communication training
You will be provided with 2-days of workshop training on how to hone your communication skills necessary for delivering prognostic messages to clients and their families.

Part 1

Part 2

Eight weeks later, you will present a case-study to your peers in the group using power-point about how you have integrated using the EBP library with a client on your case-load and what happened.

Eight weeks later, you will present a case-study to your peers in the group using power-point and an audio-tape about how you have integrated using the communication techniques with a client on your case-load and what happened.

6 | Midway Assessment | After the first 2 parts of the training is complete, you will complete the mid-way assessments. These include: completing a clinical case scenario exam, a survey questionnaire, and a case study form.

<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Part 3</td>
<td>Advanced communication training</td>
<td>You will then be provided with the 2-days of workshop training on how to hone your communication skills necessary for delivering prognostic messages to clients and their families.</td>
</tr>
</tbody>
</table>
| Part 4 | Evidence-based decision-making | You will then be provided with 2-days of workshop training on how to use an EBP library to assist you with decision making. 

Part 3

Part 4

Another eight weeks later, you will present a case-study to your peers in the group using power-point about how you have integrated using the EBP library with a client on your case-load and what happened. 

Another eight weeks later, you will present a case-study to your peers in the group using power-point and an audio-tape about how you have integrated using the communication techniques with a client on your case-load and what happened.

7 | Final Assessment | After the training is complete, you will complete the final assessments. These include: completing a clinical case scenario exam, a survey questionnaire, and a case study form. |
Appendix 4 – Information Sheet for Staff Participants

Code
Name:

The research team will collect all work that consenting participants have completed to analyse.
Are there benefits in participating?
Both workshops are considered to be beneficial for the professional development of allied health staff at The Spastic Centre. The EBP workshop aims to equip participants with the confidence, knowledge and practical skills to find, interpret and apply the latest evidence into their daily work. The Communication Skills workshop uses case studies and problem based learning to explore the approaches of delivering prognostic messages to clients and their carers.

Are there any discomforts, side effects and risks involved with the study?
There are no anticipated risks from being involved in this study. That said, in both workshops participants will be encouraged to reflect on their current therapy practice and this may be a challenging process for some participants. Some participants may find that the information being presented is quite different from their current practice and this also may be confronting. If you experience any distress from participating in this study – contact another investigator, your manager or the staff helpline.

Privacy and Disclosure of Data
The research team will respect all aspects of your privacy and you can be assured that your personal details will remain confidential at all times. Only the researchers will have access to information about you and the other participants and it will always be viewed in de-identified format. When the project is finished, a report about the study will be written. This report will be available for other people to read. The report will only present statistical and research findings. It will not reveal identifying information about any individual and no one will be named. All study information will be stored in locked cupboards or password protected electronic files.

Consent and Withdrawal
Participation in the research component of the training examining the effectiveness of EBP intervention is entirely voluntary. We will only include your information if you sign a consent form. If, in the future, you change your mind about being involved, you can withdraw your consent to participate. You do not need to provide any reason. You may access the information collected about you at any stage, by contacting The Spastic Centre. You will be informed about your progress throughout the study and will also be provided with a copy of the study results.

This Information Sheet is for you to keep. If you have any questions or would like to know more about this project, please contact:

Lanie Campbell
Research Assistant
Cerebral Palsy Institute
● Ph: 9802 4497
Email: lcampbell@tscnsw.org.au

Iona Novak
Head of Research
Cerebral Palsy Institute
Ph: 98024492
Email: inovak@tscnsw.org.au

Should you wish to talk to someone not involved in the study or make a complaint about the conduct of the research project, please contact:

Human Research Ethics Committee
The Spastic Centre
Telephone: 9479 7200
Email: cbeckett@tscnsw.org.au
APPENDIX 5
Self-evaluation Form

SERVICE DELIVERY AND DECISION MAKING and ADVANCED COMMUNICATION AND COACHING
EVALUATION FORM – SELF RATING

<table>
<thead>
<tr>
<th>PART 1:</th>
<th>Participant Information (8 questions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART 2:</td>
<td>Self-Ratings of Communication, Coaching, Goal-Setting, Evidence Based Practice &amp; Outcome Measurement Competencies (25 questions)</td>
</tr>
<tr>
<td>PART 3:</td>
<td>Evidence Based Practice &amp; Outcome Measurement Competencies (6 open-ended questions)</td>
</tr>
<tr>
<td>PART 4:</td>
<td>Evidence-Based Practice Attitude Scale Items (8 questions)</td>
</tr>
</tbody>
</table>
PART 1: Participant Information

1. Profession
   - [ ] Conductor
   - [ ] Early Educator
   - [ ] OT
   - [ ] PT
   - [ ] Psych
   - [ ] SP
   - [ ] SW
   - [ ] Welfare
   - [ ] Other (please specify) _______________________________________________________________________

2. I am employed at The Spastic Centre as ...... (eg. Speech Pathologist, Family Support Worker)

3. Employment
   I have been working at The Spastic Centre for ... ______ year/s

4. Grade Level
   I am employed as a ... Level 1 Level 2 Level 3 Manager (PM, RM) Other or N/A

4. Clinical experience in the disability field
   Including my time at The Spastic Centre I have been working with people with disabilities for ... ______ year/s

5. Previous continuing education
   I have attended evidence based practice training before. [ ] Yes [ ] No

6. Previous continuing education
   I have attended communication skills training before. [ ] Yes [ ] No

* The same codename that you chose the first time you completed this form.
## Appendix 5 - Self-Evaluation Form

<table>
<thead>
<tr>
<th>7. Language</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>English is my first language.</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>
### PART 2: Self-Ratings of Communication, Coaching, Goal-Setting, Evidence Based Practice & Outcome Measurement Competencies

**INSTRUCTIONS:** Select the answer that most accurately reflects your practice today. If you do not know what an abbreviation or term means, tick ‘never’.

<p>| | | | | | | | |</p>
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<tbody>
<tr>
<td></td>
<td>Never</td>
<td>1-5% of the time</td>
<td>5-24% of the time</td>
<td>25-49% of the time</td>
<td>50-74% of the time</td>
<td>74-99% of the time</td>
<td>Always</td>
</tr>
<tr>
<td>1. I develop and document measurable goals with families/clients</td>
<td></td>
<td></td>
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<tr>
<td>2. I explore the feelings of families/clients during conversations</td>
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<tr>
<td>3. I conduct and document COPM interviews with families/clients to assist with service planning</td>
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<td>4. I explore and express understanding to families/clients when strong emotions are present</td>
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<tr>
<td>5. I construct and document GAS scales to describe the expected outcome from intervention for families/clients</td>
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<td>6. I undertake “difficult conversations” with families/clients rather than avoid the topic</td>
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<tr>
<td>7. I score and document my client’s COPM and GAS measures and use this information for planning</td>
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<td>8. I name emotions that families/clients are experiencing during conversations</td>
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<tr>
<td>Question</td>
<td>Never</td>
<td>1-5% of the time</td>
<td>5-24% of the time</td>
<td>25-49% of the time</td>
<td>50-74% of the time</td>
<td>74-99% of the time</td>
<td>Always</td>
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<tr>
<td>9. I determine and document my client’s GMFCS or MACS level to help inform decision-making</td>
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<td>10. I ask families/clients if they have access to personal support when I detect anxiety, or depression, or distress</td>
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<td>11. I ask parents/clients to consent to joining the CP register and notify them to the register</td>
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<td>12. I confirm that families/clients understood what I meant, even when the topic is difficult</td>
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<td>13. I communicate news or facts to families/clients, to help them develop realistic expectations from intervention</td>
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<td>14. I use empathetic and supportive statements in response to emotion</td>
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<td>15. I identify if a goal (in my speciality) is realistic based on assessment information and prognostic evidence</td>
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<td>16. I ask open-ended questions to illicit more information</td>
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<td>17. I reword goals with families/clients to be realistic, if they set goals that are unrealistic</td>
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<td>18. I draw solutions out of families/clients rather than directing them to answers</td>
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<td>19. I check what interventions (in my speciality) have higher levels of supporting evidence, using e.g. databases, CATs</td>
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<td>20. I listen, reflect and give feedback for the greater part of conversations</td>
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<tr>
<td>21. I select interventions with the highest levels of evidence that match the goals identified by my families/clients using a systematic EBP approach, e.g. CATs, PICO searches</td>
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<td>22. I prepare for conversations that I anticipate will be difficult prior to the meeting</td>
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<td>23. I communicate the outcomes of intervention to families/clients using outcome measures, even when goals aren’t achieved</td>
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<tr>
<td>24. I name the issue when mine and the family’s/client’s viewpoints conflict</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td></td>
<td>Never</td>
<td>1-5% of the time</td>
<td>5-24% of the time</td>
<td>25-49% of the time</td>
<td>50-74% of the time</td>
<td>74-99% of the time</td>
<td>Always</td>
</tr>
<tr>
<td>25. I summarise and check that the client understands the information I have shared</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td></td>
<td>Never</td>
<td>1-5% of the time</td>
<td>5-24% of the time</td>
<td>25-49% of the time</td>
<td>50-74% of the time</td>
<td>74-99% of the time</td>
<td>Always</td>
</tr>
</tbody>
</table>
1. Name up to two valid, reliable, sensitive to change outcome measures that could be used with a client with cerebral palsy.

2. Choose 3 interventions from the list (attachment) and state the level of research evidence according to the STOP, MEASURE, GO system (attached).

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Stop/Measure or Go?</th>
</tr>
</thead>
</table>

3. A client is referred who wants to improve his walking, especially at school. He walks independently but falls quite a lot. He also is being bullied at school but is too frightened to tell anyone. He wonders if his poor articulation might have something to do with why he is bullied. He wants the bullying to stop but is not sure how to make it happen. Write one hypothetical goal that you could set for this client.

4. A client is referred who has a GMFCS of 5. He is 5 years old. What key messages would you be telling his parents regarding expectations for his future? OR an existing adult client stops being able to walk due to pain and wants to use a wheelchair. What key messages would you be telling them regarding this decision?

5. What types of studies/articles are considered to be high evidence?

Name 2 interventions for people with cerebral palsy that have high level evidence supporting their effectiveness.
### Part 4: Evidence-Based Practice Attitude Scale Items

**INSTRUCTIONS:** Select the answer that most accurately reflects your attitude today

**NOTE:** Manualized therapy, treatment, or intervention refers to any intervention that has specific guidelines and/or components that are outlined in a manual and/or that are to be followed in a structured or predetermined way.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at All</th>
<th>To a Slight Extent</th>
<th>To a Moderate Extent</th>
<th>To a Great Extent</th>
<th>To a Very Great Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to use new types of therapy/interventions to help my clients</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I am willing to try new types of therapy/interventions even if I have to follow a treatment manual</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I know better than academic researchers how to care for my clients</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I am willing to use new and different types of therapy/interventions developed by researchers</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>Research based treatments/interventions are not clinically useful</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>Clinical experience is more important than using manualized therapy/interventions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I would not use manualized therapy/interventions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I would try a new therapy/intervention even if it were very different from what I am used to doing</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
</tbody>
</table>