

Eat Your Peas! A rural interdisciplinary service delivery model

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Introduction

Feeding difficulties in children are complex in nature and aetiology, involving sensory and motor pathways, multiple organs and particular behaviours, and are best managed by an interdisciplinary, collaborative treating team. (1-3) The team should involve the expertise of a speech pathologist, dietitian, occupational therapist, as well as, the paediatrician, psychologist and often other specialists. (3, 4) The benefits of collaboration can include improved client satisfaction with an increased range of clinical skill sets from multiple disciplines. Improved morale, greater job satisfaction, increased efficiency and lower staff stress benefit not just the patient, but also the clinicians involved. (5)

The prevalence of feeding related problems in children is estimated to be between 25–45%, and is higher amongst those with developmental disability. (6, 7) Children who present with feeding difficulties, commonly (up to 86%) have an underlying medical condition. (8) Gastro-oesophageal reflux disease (GORD), food allergy and constipation are most frequently seen. Oro-motor and oro-sensory problems have been identified to precede feeding difficulties in isolation or along with medical conditions. (8) The prevalence of feeding disorders is expected to increase as the survival rates of children with significant disease and/or developmental disabilities increase. For example, children with extreme prematurity, genetic conditions and complex cardiac defects are more likely to having feeding difficulties. (4) Feeding difficulties in children may be associated with decreased appetite and/or dysphagia, and characterised by certain behaviours including: adipsia (absence of thirst), food refusal, self-feeding inadequacy, excessive meal duration, choking, gagging, vomiting, inappropriate mealtime behaviours and food selectivity by type and texture. (9, 10) Severe feeding difficulties that are persistent over time may result in malnutrition, nutrient deficiencies, delayed development, cognitive dysfunction, poor growth, and excessive family stress, (11-13) and consequently need to be identified and treated early on.

Regional and rural communities experience poorer health outcomes and have higher health care requirements exacerbated by determinants of health including socioeconomic status (SES) and demography. (14, 15) Lower SES is associated with poorer access to healthcare and increased mortality. (15)

Coffs Harbour Health Campus (CHHC) is one of two major referral hospitals for the Mid North Coast Local Health District (MNCLHD), the other being Port Macquarie Base Hospital. The CHHC catchment includes the Local Government Areas (LGAs) of Bellingen, Coffs Harbour and Nambucca, and is classified by the *Australian Standard Geographic Classification Remoteness Areas* as either inner regional or outer regional. (16)

The MNCLHD has a higher rate of unemployment than the New South Wales (NSW) state average, and 30-40% of households in the MNCLHD have an income of less than \$600 per week. (17) The Aboriginal and Torres Strait Islander paediatric population is estimated to be at 9% in the CHHC catchment area, compared to the NSW state average of 5.5%, and can be broken down by LGA; Bellingen 6%, Coffs Harbour 8%, and Nambucca 17%. (18) A low SES, high Aboriginal and Torres Strait Islander population make the CHHC catchment a vulnerable community.

This vulnerable regional community is situated approximately 387 kilometres from the nearest NSW tertiary hospital (John Hunter Hospital, Newcastle)(19) and 332 kilometres from the Gold Coast University Hospital in Queensland. (20) This distance provides further barriers to access required health and preventative services. A direction of *The NSW Rural Health Plan: Towards 2021* is to 'ensure people living in rural communities are able to access the right care, at the right time, as close to home as possible' in order to reduce barriers of identifiable determinates of health. Strategies suggested include enhancing the rural health workforce and expanding the delivery of high quality health services. (17) Effective teamwork, referral pathways and continuing professional development all enhance the potential for improved outcomes in children with feeding difficulties and support client centred care. This is especially true with the growing requirements of health professionals to manage complex issues in health in a regional centre. (21, 22)

Development of an interprofessional service

In 2011, it was identified that individual Child and Adolescent Family Health (CAFH) clinicians from Speech Pathology and Occupational Therapy, as well as, Acute Care Dietitians at CHHC were consulting mutual paediatric clients surrounding assessment and therapies for feeding difficulties. In January 2012, this insight inspired discussions between departments at a local level ascertaining a service gap, identifying a clinical need for the development of an interdisciplinary, collaborative team with skills in paediatric feeding. The Feeding Assessment and Management (FAM) clinic was established, and a flow chart was developed outlining the steps from referral to discharge for each client.

A tertiary referral system was designed and implemented, requiring a client to be actively involved with either CAFH Speech Pathology, Occupational Therapy, or Acute Outpatient Dietetics prior to referral. Prospective FAM clients are those eligible for existing CAFH services and ineligible for any other service or government funding. Any Ineligible clients are redirected to the appropriate service.

Clients referred to the FAM clinic are expected to require interdisciplinary support, and so, need to be identified as having concerns in at least two out of three specific clinically relevant areas (Table 1). Referrals are received by the team are assessed for eligibility, prioritised and wait-listed. If a referred client is deemed ineligible for FAM Clinic, the treating clinician is advised to seek further input from other services.

Table 1 Clinically relevant areas of concern for referral to FAM clinic: Growth and Nutrition, Feeding Skills and/or Sensory Concerns

Growth and Nutrition	Feeding Skills	Sensory
Faltering growth	Perceived coughing or choking on oral intake	Activity regulation difficulties
Vitamin deficiency	Frequent respiratory infections (queried aspiration)	Distress with food or fluid on hands, face or body
Mineral deficiency	Lengthy feeding times	Refusal to interact with food
Enteral nutrition	Difficulties managing textures	Sensory modulation* problems
Poor oral Intake	Delayed transition to solids	Limited textural or visual acceptance Interoception problems [#]

Eligible clients and parents or guardians are offered an appointment via telephone and then sent an appointment letter. The letter includes details of what to expect in the appointment and what to bring to the appointment. It also requests that the parent or guardian pack a range of appropriate foods, so that the client can be observed and assessed in a clinic mealtime environment.

Each interdisciplinary assessment session requires approximately 1.5 hours of face-to-face client time and includes; client and parent or guardian history taking, mealtime observation, objective measures, such as height and weight, as well as more generalised parent or guardian discussion. Client centred goals are discussed and strategies provided based on the *Sequential Oral Sensory* approach to feeding. (24) Follow-up plans are discussed with parents based upon team findings and presentation. This may involve ongoing management by one or more clinicians, or a more complex structured review and/or ongoing management by the interdisciplinary team. A comprehensive report is provided to the General Practitioner (GP), paediatrician, parent or guardian and other relevant parties. The report outlines findings related to clinical concerns surrounding feeding difficulties, and recommendations provided by the interdisciplinary team. Onward referrals to appropriate clinicians not involved in FAM may also be discussed or provided.

The FAM clinic outcomes were collated from clinic records in regards to attendance and referral numbers. Clinician reflections and feedback were also collated to gain further insight surrounding the service.

Results

Number of clinics

The first FAM clinic was held in June 2012, initially the clinics were held as required, developing into the current structure of one clinic per month in 2014 (Table 1). An average of 9.7 clinics have been held annually for the past three years.

* Sensory modulation refers to the tendency to generate responses that are appropriately graded in relation to incoming sensory stimuli 23. Case-Smith J, Clifford O'Brien J. Occupational Therapy for Children and Adolescents. Seventh ed: Elsevier; 2015.

[#] Interoception problems include lack of response to hunger cues, discrimination problems and difficulty discerning between hot and cold

Table 2 Number of FAM clinics per year and number of clients referred per year

Year	a) Clinics	b) Clients Referred
2012	3	9
2013	3	9
2014	10	13
2015	10	19
2016	9	6
Average/year	7	11
Total	35	56 clients

Client referrals

From June 2012 until December 2016, 56 clients were referred and accepted to the FAM clinic (Table 1), and of those, 20% (n=12) of clients either failed to accept an offer of clinic appointment, failed to attend or were unable to attend a session offered.

Eighty-seven client sessions (mean of 2.5 sessions per clinic) have been held since the FAM clinic inception up until December 2016). Ranging from one to seven sessions per client.

Of those who attended 11% (n=6) were identified of non-English speaking background and required an interpreter, whilst three clients identified as Aboriginal.

Client outcomes

Client families and clinicians identified that improvement in feeding skills, sensory concerns and nutrition status related to the initial client centred goals, have been achieved by many clients who attended FAM clinic. Anecdotally, a reduction in mealtime avoidance behaviours was a common area identified by clinicians; this was associated with decreased parental stress and anxiety around mealtimes.

Another benefit often described was increased food variety, which corresponded to goals identified by parents and clinicians. Typically reported, were improvements in the range of fruit and vegetables, as well as protein sources consumed. Along with improved variety, the quantity of food consumed at an eating occasion was highlighted. Subjectively, parents and carers described reduced anxiety in regards to adequate intake and growth. Clinicians involved with FAM clinic reported growth improvements in clients previously reported to have faltering growth.

Anecdotally, clinicians felt improved adherence and attendance from particular families that would have previously had poor commitment to single discipline appointments and recommendations. Clinicians believed reduced travel time, ease of access and a consolidated approach was more achievable for most families, particularly those from lower socioeconomic and non-English speaking backgrounds.

Clinician satisfaction was an additional topic discussed. Clinicians involved in the FAM clinic reported improved quality of care and job satisfaction through interdisciplinary delivery, with enhanced client centred and appropriate assessment methodology, goal setting, clinical support and improved outcomes.

Discussion

A clinical need in the Coffs Harbour local community has been identified and addressed via the development and implementation of the FAM clinic. This regionally located clinic enables the families of children with feeding difficulties to access an interdisciplinary allied health team within a closer proximity to their home. Distance and the costs associated with travel, including time away from work, school and family life, are often one of the biggest barriers associated with accessing specialised health care services, previously only provided at metropolitan hospitals. A local service now exists meeting a formerly unmet service gap, utilising specifically trained clinicians, enhancing access to healthcare and ultimately, improving the client journey.

Rural and regional families, frequently from lower socioeconomic backgrounds in the CHHC catchment area, have reported benefits in a structured and cohesive approach to information delivery and client centred goal setting. Interdisciplinary sessions surrounding feeding allows informed decision making and prioritising for often complex cases, requiring increased support and planning. Due to the collaborative and client focused nature of the sessions, appropriate goals are more likely to be set, and consequently desired outcomes achieved. The interdisciplinary team is able to contribute to goal development with the client and their family and then provide discipline specific or combined discipline strategies to achieve broader goals or sub goals. Families have found that a collaborative single message from three individual clinicians improves clarity and clearly defines strategies, which the family can then implement in the community setting in order to achieve a common goal.

This population commonly have little external support and are struggling financially, socially and or, emotionally. For many clients, having to repeat histories and report progress updates to multiple clinicians in numerous appointments, can dishearten and disengage clients and families. A single 'feeding team' with clear therapy strategies allow clients and their families to trust and feel supported in, what can be, a confusing and complicated health system. The FAM clinic clinicians then liaise with other interested parties, as required, including the GP or paediatrician, allowing for an improvement in care integration and an ongoing management plan. The collaboration of experienced clinicians allows for recognition of other required services, which may further assist clients and could include psychology, physiotherapy, nursing and medical specialists. This broader interdisciplinary assessment and resulting identification of further required clinical support could possibly be missed in single discipline settings.

Furthermore, improved clinician satisfaction with assessment, goal setting and client outcomes provides ongoing job fulfilment and may continue to motivate clinicians to prioritise FAM clinic amongst their busy clinical load.

The establishment and smooth operation of the FAM clinic is not without its difficulties. Time constraints and lack of additional funding mean the Coffs Harbour FAM clinic is unable to include a paediatrician or psychologist at each session, despite recommendations from the literature (3, 4). The addition of these services would certainly streamline, provide continuity and enhance a holistic approach to client centred care.

Given the complex nature, low SES and family priorities of many clients referred and accessing FAM clinic, fail to attend (FTA) rates are significant. Recently, it has been observed that Short Message Service and telephone reminders are useful to prompt attendance. However, it must be highlighted, that often feeding can be a lower priority for families with children who have complex medical

conditions with multiple medical appointments or who may need to travel to tertiary centres frequently for specialist care, and so not all cancellations and FTA rates can be avoided.

To combine three separate services a single clinic requires constant interdisciplinary collaboration and discussion. Referral processes, triage lists and patient complexity are often prioritised differently in each single discipline. Ensuring a tertiary referral system allowing equality of access for clients despite discipline specific preferences can be challenging. The current FAM referral pro forma allows concerns to be raised in two or more areas of; growth and nutrition, feeding skills and sensory concerns. Deliberation, case conference and teamwork can assist in an interdisciplinary decision, and improve objectivity in triaging for the FAM clinic appointments.

In order to replicate a similar interdisciplinary style feeding clinic in other regional or rural centres a clinical need must first be established. Networking with local paediatric clinicians may help to identify gaps or crossovers in therapy for feeding difficulties. Insights may be gained from clinicians including but not limited to, paediatricians, speech pathologists, occupational therapists, dietitians, psychologists and physiotherapists as well as child and family nurses. Services may need to communicate across service streams and levels of management. In addition, rural or regional clinicians may need further upskilling in assessment and management of paediatric feeding difficulties, over and above the usual 'specialist-generalist' role that many regional and rural clinicians cover.(25, 26) Technologies such as teleconferencing and webinar presentations may be more practical for upskilling rural health clinicians. Combining didactic and workshop education along with mentoring possibilities from either specialised tertiary colleagues or rural and remote colleagues could assist in increasing confidence, experience and empower other regional centres to establish a similar program.(25, 26)

Logistic and administrative operations can often be time consuming, and so, must be factored in to the initial planning of the FAM clinic. Creation of appointments, correspondence and report writing should be planned and a system created in order to ensure the smooth running of the clinic and in order to minimise poor attendance. Documentation sharing may be streamlined with common electronic drives and folders, shared between clinicians. Communicating with therapists, administrative staff and managers to allocate adequate resources must be discussed prior to clinic commencement and ongoing evaluation and re-organisation must be considered. Clinic structure, therapist involvement and frequency of clinics may need to be adapted depending on local requirements and abilities, as well as staff availabilities and job demands.

If FAM clinic was to be replicated in another setting, where a need had been identified, further investigation into the establishment and the implementation processes would build on the above learnings. Evaluation of attendance, client and clinician satisfaction, as well as, logistical operations would guide future development. Further evaluation would provide evidence to endorse the importance of rural and remote interdisciplinary teams providing increasing support for complex clinical and behavioural concerns in a paediatric population.

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Presenter

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