Counties Manukau Health
Business Case for Diabetes Nurse Specialist FTE 0.2

Recommendation

It is recommended that the Director of Hospital Services
Receive this proposal and business case

Endorse: Increasing the Diabetes Nurse Specialist (DNS) fte by 0.2 in order to support the establishment of an additional Young Adults with Diabetes (YADs) clinic in the Mangere Health Hub.

Note: This new clinic will be part of CMH's Integrated Care model and support the continued "move to the left" being undertaken by the Diabetes Service.

Prepared and submitted by: Catherine Tracy

1. PURPOSE

The purpose of this business case is to request an increase of 0.2 DNS fte in order to set up a new YADs Clinic in the Mangere Health Hub, because of the increasing need for this type of clinic in the CMH population.

2. BACKGROUND

Diabetes Mellitus (DM) is a common chronic disease with significant morbidity, mortality and cost (Coppell et al., 2013). The number of people with DM is increasing due to population growth, ageing, urbanisation and the increasing prevalence of obesity and physical inactivity (Wild, Roglic, Green, Sicree, & King, 2004). Wild et al (2004) have estimated that globally the prevalence of DM for all age groups was 2.8% (171 million) in 2000 with a projection that this would increase to 4.4% (366 million) by 2030 (Wild et al, 2004). These findings are supported by The International Diabetes Federation (IDF), who has estimated that DM will affect 552 million people by 2030 (Whiting, Guariguata, Weil, & Shaw, 2011).

In New Zealand (NZ) estimating the prevalence of DM has been challenging due to using self-reports of doctor diagnosed DM only. Coppell et al (2013), however, have estimated the NZ prevalence of DM to be 7% for those aged fifteen years and older, with an additional 25.5 % being diagnosed with pre-diabetes (Coppell et al., 2013). Those at greatest risk of DM are Maaori and Pacific. The reasons for this are multifactorial but are thought to include obesity and poor access to timely care. Maaori and Pacific people are not the only high risk ethnic groups; with Asian adults also having high levels of diagnosed DM 7% (MOH, 2013).

Since the 1990s, however, there has been a notable upward trend in the rate of T2DM diagnosed amongst children and adolescents. Initially recognised in the United States of America, where T2DM previously accounted for less than 3% of newly diagnosed DM, it now accounts for up to 45% of new cases of DM amongst adolescents (Pinhas-Hamiel & Zeitler, 2005).

This staggering increase in the prevalence of T2DM globally has also been observed in NZ. One local study from an Auckland based adolescent DM clinic, found the prevalence of T2DM amongst those aged 14 to 20 years increased from 1.8% in 1996 to 11% by 2002. This increase is

concerning as people diagnosed with T2DM at an early age (18-44 years) appear to experience a more aggressive disease, with a much higher risk of cardiovascular disease (CVD) compared to age matched subjects (Hillier & Pedula, 2003).

The goals of DM management involve ensuring normal (or near normal) glycaemic blood glucose levels (BGL), avoiding hypoglycaemia and hyperglycaemia, both of which have short and long-term complications (Schilling, Knafl, & Grey, 2006).

In T1DM control is achieved by taking multiple daily insulin injections or using acontinuous insulin pump. Insulin requirements are individual and are balanced against carbohydrate intake and activity. For T2DM treatment may include oral medications or insulin, again combined with lifestyle modifications such as diet and increasing activity (Copeland et al., 2013). Such a rigorous treatment regime may have a negative impact on quality of life (QOL) which may affect how well people manage their DM (Hanberger, Samuelsson, Lindblad, & Ludvigsson, 2008; Lawrence et al., 2012). Some studies have demonstrated that a good QOL is associated with improved metabolic control (Skinner, Hoey, McGee, & Skovlund, 2006).

Research has shown that young people diagnosed with DM have greater morbidity and mortality in all ages compared to non-diabetics, and DM therefore has significant negative impact on both health and quality of life (Coppell et al., 2013; Scott et al., 2006; SEARCH for Diabetes in Youth Study Group, 2006).

The cost of growing up with T1DM includes the emotional cost, the pain and inconvenience of daily capillary blood glucose testing and injections (Guthrie, Bartsocas, Jarosz-Chabot, & Konstantinova, 2003). The anxiety around wanting to fit in with your peers, feeling different at school, or socially or on the sports field or requiring assistance for treatment if hypoglycaemic in public may also negatively impact QOL (Guthrie et al., 2003; Peyrot & Rubin, 2007; Rubin & Peyrot, 1999).

Other costs which may impact the families of children or adolescents with DM include the financial cost of parents taking time off work to care for their children or attend appointments both planned and unplanned; the cost to siblings or other family members who may also be directly or indirectly affected by DM and the impact on the next generation from the poor decisions made by this one (Guthrie et al., 2003).

As of the 22 of June 2016, there are 132 young people with DM active within the YADs database at CMH. Currently there are monthly clinics based at MSC and Botany facilities. Given the high need and complexity of YADs, the best practice model of care recommends that they patients should be seen by a DNS once every three months. This is not feasible currently due to the deficit of in fte for DNSs.

3. DEMAND FOR YADs CLINICS

Currently there are 22 multidisciplinary clinics run in MSC and Botany annually. These clinics include SMOs, dieticians, health psychologists, social workers and DNSs. For the best practice model of care to be implemented, i.e. all YADs patients are seen once every 3 months by a DNS, fte need to be increased.

The current demand is as follows:

- 132 patients seen every 3 months requires a minimum of **528** appointments per year
- Currently at MSC- 5 nurses x 11 clinics = 55 x 4 patients or **220** appoints pa

- Currently at Botany – 2 nurses x 11 clinics (all day clinics) = 22 x 8 patients or **176** appointments pa
- This gives a total of **369** appointments per annum
- There is a deficit of **159** appointments per annum for YADs clinics.

	Current Appointments pa	Required Appointments pa	Variance
DNS Apppoints	369	528	159

In order to implement another multidisciplinary clinic it is proposed that the SMO, dietician, social worker and health psychology clinic time is redistributed and restructured to manage the clinic within current fte/time in clinic as these groups are not required to see patients every 3 months.

4. CURRENT WORKFORCE CAPACITY

Currently there are 7 DNS's with capacity for YADs clinics equal to 369 appointments or approximately 1.325 fte.
The DNSs take the majority of the work in the clinics which includes liaising and coordinating the rest of the team (SMO, health psychiologists, social workers and dieticians) and consulting with them as required.

5. REQUIRED WORKFORCE CAPCITY

SMO, health psychologist, dietician and social workers have capacity to cover a new clinic with rearrangement and redesign of the clinic make-up and time.
The DNS needs, i.e. for the 159 appointments which is currently not being managed adequately, there will need to be an additional **0.2 fte DNS**.

Appointment	Number of appointments	Total no. of clinics required	CNS FTE required
DNS YADs	159	11*	**0.2**

***Note**: Creating an additional clinic at Mangere, with one clinic per month for 11 months, will actually give an additional 176 DNS appointments, or 545 appointments available overall for YADs. This is a surplus of 17 appointments initially, but this will enable room for growth and/or flexibility for those patients who require to be seen more than 3 monthly.

6. FINANCIAL ANALYSIS

The plan would be to increase DNSs by 0.2 fte, an increase of approximately $17,888 per annum

Current DNS FTE for YADs	Proposed DNS FTE	FTE Variance	Current DNS Budget (1.325fte) $	Proposed DNS Budget (1.525 fte) $	Variance $
1.325	1.525	+0.2	*118,418	136,306	**17,888**

***Note:** These figures are based on an average DNS wage of $89, 350 pa

7. Recommendation

It is recommended that the Diabetes Nurse Specialist fte increase by 0.2 fte to enable an additional Young Adults with Diabetes clinic to be established at Mangere Health Hub to manage this group of patients in the most appropriate way as per best practice.

References

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CM Health recently completed a stocktake against the 20 Quality Standards for people with diabetes, which includes a standard focused on Young People;

Young people with diabetes Young people with diabetes should have access to an experienced multidisciplinary team, including health professionals with expertise in development, youth health, health psychology and dietetics	CM Health run a dedicated MDT Adolescent Diabetes service (aged 16-24) with transition clinics from Starship Children's Health services, active follow-up and transition care, pump service with nurse, doctor, health psychology, dietetic and centre for youth health input (Social Worker and Physician as needed) involvement. These clinics run once a month at Module 4, Manukau SuperClinic - 13:00 to 18:00, and a satellite clinic once a month at Botany SuperClinic - all day 8.00 – 16:30, and more recently on a monthly basis at Mangere. There has been some work in some of the Locality areas to work with School Nurses to help/ share the management of patients with diabetes over 16 years by secondary services. Analysis of (encrypted) population demographics (laboratory and dispensing data) suggests that a significant number of young adults with diabetes are not being referred to, and seen in these clinics, which are the gold standard for care. More work to identify and encourage this referral needs to be undertaken.