Newsletter: 331/2018
Date: 21 May 2019
Distribution: Children's Hospital Westmead
Contact: Your HSU Organiser

# Children's Hospital Westmead Changes

Dear Member,

Attached is correspondence the HSU has received from Sydney Childrens Hospitals Network regarding changes to the Diabetes Complications Assessment Service at Westmead.

**Member feedback requested**

The HSU industrial team is currently reviewing the potential impacts of the proposed change upon affected employees. We are now seeking feedback, views and comments from our members.

Please review the attached documentation and provide comment and feedback by 4 June 2019. You can submit it by email to tom.stevanja@hsu.asn.au with subject line *CHW DCAS.*

**HSU organiser and sub-branch involvement**

Your HSU organiser Glen Pead will be visiting your workplace shortly and convening a meeting to discuss the matter with affected employees. The HSU is also seeking expressions of interest from members to be part of the consultative process as a workplace delegate in any upcoming USCC meetings regarding this proposal. The most effective way to deal with these kinds of proposals is by taking into account the concerns of the group, agreeing on a way forward and presenting that united position to management.

Please distribute this newsletter to your work colleagues for their information and comments and encourage them to attend the meeting.

**Not a member of the HSU? Now is time to join and have your say! You can join online at www.hsu.asn.au/join or call 1300 HSU NSW and join over the phone.**

A union's effectiveness and negotiation power depends upon the strength and density of its membership base. Join your work colleagues today by becoming a member of the Health Services Union and help us continue to protect and improve your working life.

In unity,

Gerard Hayes
Secretary, HSU NSW/ACT/QLD

The Sydney children's Hospitals Network
care, advocacy, research, education

*TRIM Ref: SCHN19/3966-2*

Mr Gerald Hayes
Secretary
Health Services Union
Locked Bag 3
Australia Square
Sydney NSW 2007
Email: secretary@hsw.asn.au

*Attention: Tom Stevanja, Deputy Manager, Industrial Division, tom.stevanja@hsu.asn.au*

Dear Mr Hayes,

**Re: Diabetes Complications Assessment Service, The Children's Hospital at Westmead**

I write to advise of proposed changes to the model of care for the Diabetes Complications Assessment Service (DCAS) at The Children's Hospital at Westmead (CHW).

Please find the attached consultation document, which includes the following:

- A summary of stakeholder meetings regarding DCAS,
- details of four discussed models, including pros and cons of each model and an assessment of the models against agreed guiding principles, and
- Recommendations for the ongoing model of care.

Staff members have been provided with this document and have the opportunity to provide feedback. Please provide any feedback to the proposal within two weeks from the date of this letter. Should you have any questions, please contact Ms Georgette Danyal, Clinical Program Director on phone 02 9845 3715 or email: georgette.danyal@health.nsw.gov.au

Yours sincerely,

Ian Fuller
**Director of Workforce**
Date: 20.5.2019

Locked Bag 4001
Westmead NSW 2145
Sydney Australia

Tel 61 2 9845 0000
Fax 61 2 9845 3489
www.schn.health.nsw.gov.au

ABN 53 188 579 090

DX 8213 Parramatta

# Stakeholder Consultation Report regarding Model of Care for the Diabetes Complications Assessment Service (DCAS) at SCHN-Westmead

Prepared by: Professor Geoffrey Ambler, Head of Department – Endocrinology and Diabetes

Date: 12 May, 2019

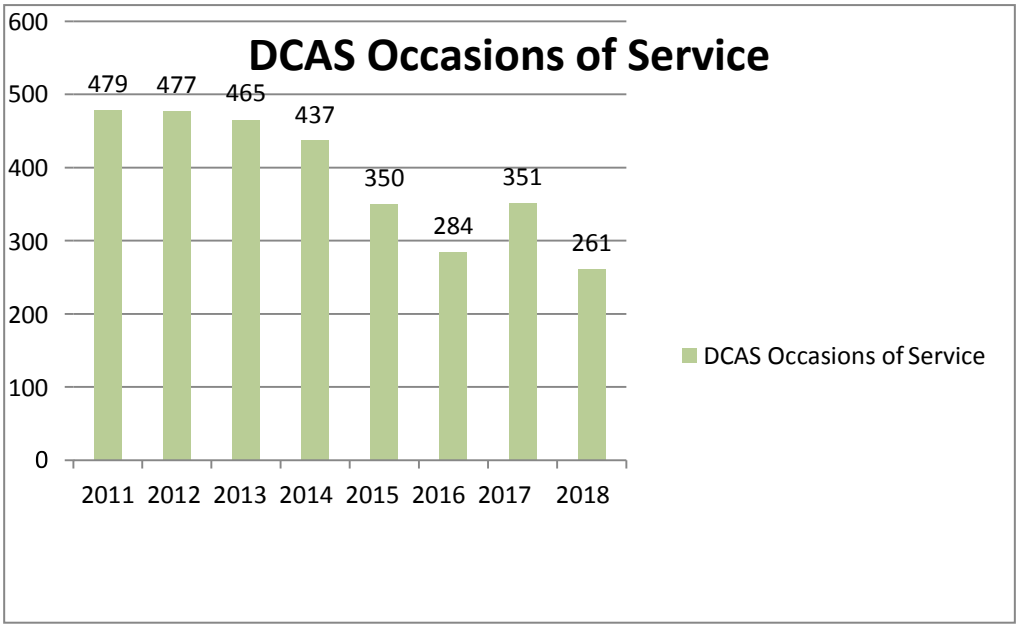
## 1. Introduction

The purpose of this document is to summarise a series of stakeholder consultation meetings regarding the Diabetes Complications Assessment Service (DCAS) service and to make recommendations for the ongoing model of care.

## 2. Background

The assessment of possible chronic complications of diabetes is a key part of diabetes management. A diabetes complications assessment service has operated as part of the Diabetes services, within the Institute of Diabetes and Endocrinology since 1990, with both clinical and research components.

The following figure shows the number of DCAS assessments per year from 2011-2018, with a 46% reduction over the last 8 years. In the calendar year 2018, there were 261 patient visits to the DCAS service, equating to 5 occasions of service (OOS) per week. Of these, 141 OOS were referrals of patients external to our service and 120 (46%) were patients internal to our service.




Diabetes complications screening is performed according to consensus guidelines, including ISPAD guidelines and others. Such guidelines are updated periodically and have been informed by the work of the CHW group and others. There are now clearly established protocols for the recommended frequency and screening. Screening can be performed in a hospital setting but is also now widely performed in the community.

While diabetes remains a serious chronic condition, there have been major advances in management in recent decades resulting in improved metabolic control and a major reduction in the risk of complications in young people. This has prompted a re-evaluation of guidelines and a reduction in the recommended frequency of complications screening over time.

The CHW DCAS clinic since inception has had a model with the following components:

- Specialist medical consultation with a Paediatric Endocrinologist
- Coordination of testing by a nurse
- Protocol-based urine and blood tests
- Retinal photography
- Other screening investigations, e.g. for neuropathy
- Opportunity to participate in approved research projects

The DCAS has a full time clinical nurse (CNS2), a part-time research assistant (0.6FTE) and medical consultations are performed by 2 senior staff specialists – Professor Kim Donaghue (Medical Lead of Service) and Professor Maria Craig.

In late 2016, Dr Ann Maguire (Medical Lead, Diabetes Service) proposed a streamlining of the DCAS screening process with the suggestion that the clinic be a nurse-led or nurse-coordinated clinic, without the need for an additional medical consultation. As the proposal was not supported by all stakeholders, a series of meetings were held as outlined below with consideration of the pros and cons of various models in the context of contemporary diabetes care.

## 3. Stakeholder meetings and Guiding Principles

The following is an outline of the key consultation meetings and associated processes that have taken place:

**1. Within department meeting 27th April, 2017**
Present: Professor Geoffrey Ambler, Dr Ann Maguire, Professor Kim Donaghue, Ms Janine Cusumano, Ms Alison Pryke, Ms Kristine Heels

**2. Within department meeting 29th May, 2018**
Present: Professor Geoff Ambler, Dr Ann Maguire, Professor Kim Donaghue, Professor Maria Craig, Ms Janine Cusumano, Ms Alison Pryke, Ms Kristine Heels

**3. Briefing document to the Chief Executive** submitted by Kristine Heels (Diabetes Nurse Manager) about proposed model to the changes of care, September 2018.
Approved by Divisional Program Chairs for further consultation 21/09/2018.

**4. Discussion paper on Models for DCAS**, prepared by Kim Donaghue and Maria Craig, 18th October 2018 (Appendix 1).

**5. Stakeholders meeting convened by Georgette Danyal**, Divisional Co-Chair, 11th December, 2018
Present: Professor Geoffrey Ambler, Professor Kim Donaghue, Professor Maria Craig, Ms Georgette Danyal, Ms Alison Pryke, Ms Kristine Heels, Dr Ann Maguire, Ms Janine Cusumano, Ms Candice Pertel (Workforce Manager), Professor Craig Munns, Mr Damien Lee (ASMOF observer).

**6. Stakeholders meeting convened by Georgette Danyal**, Divisional Co-Chair, 5th February, 2019
Present: Professor Geoffrey Ambler, Professor Kim Donaghue, Professor Maria Craig, Ms Georgette Danyal, Ms Alison Pryke, Ms Kristine Heels, Dr Ann Maguire, Ms Janine Cusumano, Professor Craig Munns, Ms Christine Robertson (Admin Assistant, Minute taker).

**7. Stakeholders meeting convened by Georgette Danyal**, Divisional Co-Chair, 2nd April, 2019
Present: Professor Geoffrey Ambler, Professor Kim Donaghue, Professor Maria Craig, Ms Georgette Danyal, Ms Kristine Heels, Dr Ann Maguire, Ms Janine Cusumano, Ms Candice Pertel (Workforce Manager), Ms Annie Beverly (Independent People and Culture Consultant), Professor Craig Munns, Ms Laura Griffin (Network Manager - Patient and Family Engagement), Mr Damien Lee (ASMOF observer), Ms Joanne Molfit (NSWNMA observer).

### *3.1 Guiding Principles*

At the meeting of 11th December 2018, Georgette Danyal facilitated the group to develop a set of guiding principles to assist with the development of recommendations. These were subsequently fine-tuned and accepted as follows:

Agreed Guiding principles:
1. The model of care must demonstrate efficient use of resources.
2. Ensure continuity of care for the child and family.
3. The model of care will demonstrate a safe, reliable, and effective care.
4. The patient journey will ensure minimum disruptions to the child/adolescent.
5. The model of care will ensure MDT input, and appropriate support to the children and families.
6. The children and families will receive appropriate education to support good outcomes for the child/ adolescent through to adulthood.
7. The diabetes complications assessment service will be evidence based and follow recent guidelines and peer reviews.

## 4. Key issues for discussion and decision making

There were extensive discussions about models of care and related issues throughout the Stakeholder consultation process. This was distilled down to consideration of 4 possible models which are outlined below. A detailed listing of all of the pros and cons as listed by participants are detailed in Appendix 2.

**Model 1 – Existing Model – nurse screening and medical consultation for all patients**

- Internal CHW patients and external patients are referred to a DCAS endocrinologist (Prof Donaghue or Craig)
- DCAS nurse performs screening tests under supervision of DCAS endocrinologist
- Referring doctor receives printed report when available.
- Patient can be offered participation in any currently approved research studies that are enrolling

**Model 2 – Dual model – nurse run for internal referrals and continuing medical consultations for external referrals**

**Internal CHW patients**

- referred by usual treating endocrinologist to the nurse run DCAS clinic
- Usual treating endocrinologist orders tests and reviews results via Powerchart Message Centre
- Urgent issues reported to the treating endocrinologist or, endocrinologist on-call
- If the patient has a CHW endocrinologist, external referrals are not needed and are declined.

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- Patients referred for a DCAS medical assessment plus screening tests performed by the nurse in DCAS
- Results reported back to the DCAS endocrinologist who in turn reports them to the referring doctor

**Model 3 – Dual model – nurse run for internal referrals and medical referral optional for external referrals**

**Internal CHW patients**

- referred by usual treating endocrinologist to the nurse run DCAS clinic
- Usual treating endocrinologist orders tests and reviews results via Powerchart Message Centre
- Urgent issues reported to the treating endocrinologist or, endocrinologist on-call
- If the patient has a CHW endocrinologist, external referrals are not needed and are declined.

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- External doctors can refer for nurse coordinated screening without DCAS medical consultation
- results are reported directly back to referring doctor

**Model 4– Dual model – option of nurse run screening or medical referral for internal referrals and medical referral for external referrals**

**Internal CHW patients**

- Internal patients who have a CHW endocrinologist could be referred for a DCAS medical assessment plus nurse coordinated tests at the discretion of the CHW endocrinologist

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- Patients referred for a DCAS medical assessment plus screening tests performed by the nurse in DCAS
- Results reported back to the DCAS endocrinologist who in turn reports them to the referring doctor

## 5. Key points of discussion and divergence of views

Two key issues emerged from the discussions:

**1. Nurse-coordinated model**

There was considerable discussion as to the suitability of patients having their diabetes screening performed by a nurse, without an additional medical consultation. As noted above, such a model is used in all other paediatric diabetes centres in Australia and New Zealand and at our partner campus at SCHN-Randwick.

A consensus was reached by both sides of the discussion that a nurse-run clinic model was appropriate and feasible, particularly for internally referred patients who have their own treating endocrinologist who provides all appropriate standards of clinical care, including physical examination, interpretation of results and continuity of care. There was disagreement as to whether this should be the exclusive model for internal patients (see 2, below).

There was consensus that externally referred patients (who do not have a CHW endocrinologist) may benefit from the addition of a medical consultation in addition to nurse screening, since this may result in additional expertise for the patient that they otherwise did not have access to.

**2. Need for additional specialist consultation for internally referred patients.**

This remained a point of contention with no consensus reached.

One side of the discussion proposed that internal specialists should be given the option as to whether they refer their patients for DCAS medical review or not. They put forward the view that the "junior endocrinologists" in the department do not have the confidence or experience to manage their patient's complications screening and interpretation and that they and their patients valued the input of Professors Donaghue and Craig who were experts in the field of diabetes complications. In addition, they contended that this was a long-standing practice that should continue and that the Medicare billings from this activity were important to hospital revenue. Concerns were expressed that allied health and medical staff back-up might be needed on occasion and may not be readily available.

The other side of the discussion contended that internal patients already had a CHW-based treating endocrinologist who provided continuity of care and was appropriately trained in diabetes complications and therefore did not require a duplicate specialist consultation by another CHW endocrinologist. Further, all paediatric endocrinologists have the requisite qualifications, skills and training to manage the diabetes complications screening, interpretation and management of their patients. The "junior endocrinologists" referred to above are all CHW Staff Specialists who have previously worked in DCAS doing DCAS medical consultations, and as such are considered competent to screen/interpret and manage diabetes complications.

It was suggested that duplicate consultations are therefore not required and are not an efficient use of senior medical resources given that there is significant capacity constraint across the Endocrinology Service in general.

Further, this side of the discussion did not see that the duplicate consultation added any value for their patient and felt that it led to an inefficient patient journey, was potentially confusing to the patient and family and undermined continuity of care. This side of the discussion acknowledged the expertise and reputation of Professors Donaghue and Craig in the Diabetes Complications field, but did not feel that this expertise was required for routine screening activities. For patients having a nurse-led service, it was clarified that allied health and medical staff back-up is readily available in the department.

## 6. Assessment of Models against agreed Guiding principles

| GUIDING PRINCIPLES | Model 1<br>Existing Model – nurse screening and medical consultation for all patients | Model 2<br>Dual model – nurse run for internal referrals and continuing medical consultations for external referrals | Model 3<br>Dual model – nurse run for internal referrals and medical referral optional for external referrals | Model 4<br>Dual model – option of nurse run screening or medical referral for internal referrals and medical referral for external referrals |
|---|---|---|---|---|
| 1. The model of care must demonstrate efficient use of resources. | NO | YES | YES | NO |
| 2. Ensure continuity of care for the child and family. | NO | YES | YES | NO |
| 3. The model of care will demonstrate a safe, reliable, and effective care. | YES | YES | YES | YES |
| 4. The patient journey will ensure minimum disruptions to the child/ adolescent. | NO | YES | YES | NO |
| 5. The model of care will ensure MDT input, and appropriate support to the children and families. | YES | YES | YES | YES |
| 6. The children and families will receive appropriate education to support good outcomes for the child/ adolescent through to adulthood. | YES | YES | NO | YES |
| 7. The diabetes complications assessment service will be evidence based and follow recent guidelines and peer reviews. | YES | YES | YES | YES |
| PRINCIPLES MET | 4/7 | 7/7 | 6/7 | 4/7 |

## 7. Conclusions and Recommendations

The model best meeting the agreed principles of care is Model 2, followed by model 3. At the final meeting it was concluded that consensus could not be reached on the key point of whether internal referrals from one endocrinologist to another were appropriate or not. The Chair of the meeting, Georgette Danyal, proposed a staged approach to changes in the model of care given all of the above considerations.

Taking all of the issues into consideration, the following is proposed as an approach that should meet the views and concerns of all stakeholders and optimize the patient journey:

**Stage 1**
Model 4 to be to implemented, in June post consultation. This should be a relatively easy transition given that there is an experienced CNS2 coordinator in the DCAS service with appropriate supports available from the Diabetes Nurse Manager, Diabetes Allied Health team and on-call medical staff.

**Stage 2 (concurrent with Stage 1)**
Staff specialists who feel that they do not have the requisite skills or experience to manage their own patients' complications screening should engage in professional development to achieve this goal, commencing without delay. Necessary hospital / departmental support would be provided through TESL entitlements.

**Stage 3**
Once stage 1 and 2 have been achieved (12-18 month time frame), transition to Model 2 should occur as the option that optimally balances the needs for the patient/family and for the overall Diabetes service and organisation.

*Monitoring / auditing of outcomes:*

- 3 monthly reviews of numbers of referrals and OOS to the nurse-coordinated clinics and internal/external medical referrals.
- Review of up-skilling of staff specialists through Performance Appraisal
- Review of operation of nurse coordinated clinic to be overseen by Diabetes Nurse Manager

## Appendix 1:

### MODELS FOR DCAS (Diabetes Complications Assessment Service)

**Background**

DCAS was established 1990.

It has always been a clinician-led clinic, with various staff members contributing to clinical assessment and reporting (including fellows, psychologists, nutritionist, nurses, orthoptist). It has functioned as part of the Multidisciplinary Diabetes Care Model under leadership of Prof Donaghue (who was also Head of Diabetes Services 2004-2016).

The service has evolved over time to reflect evidence based assessment of complications in young people. For example (i) introduction of HRV testing for assessment of autonomic neuropathy to replace pupillometry (~2010); (ii) updating of equipment for peripheral nerve assessment (2009); (iii) digitisation of retinal photographs and upgrading of retinal camera (2009); (iv) routine ACR testing rather than timed overnight AER; (v) addition of LDL, LFTs, vitamin D, vitamin B12/folate and FAI, FBC. Ophthalmologist to the Clinic has been organised from Dept of Ophthalmology (from 1990 Dr Stephen Hing and from 2014 A/Prof Gerald Liew). Ophthalmologist reviews triaged retinal images (30%), little capacity to see patients in clinic (S Hing); no room to increase the images currently reviewed (Liew communication0. Research orthoptist (Alison Pryke) grades mild retinopathy. Recent review of DCAS attendance from CHW incident cohort 1990-2009, identifies that lower socioeconomic risk score associates with lower uptake of service from 1990-2017 (Aulich et al, ISPAD 2018). Yet this is a group that is also recognised to be at higher complications risk.

Peripheral nerve function deteriorates as adolescents age (1)(DC). Retinopathy rates reduced from 1990-2004 but have stabilised or increased (Cho ADA 2016), especially severe retinopathy (Pryke et al, ISPAD 2018).

Real world data from this clinic have been cited by many for changes in clinical care, namely multiple daily injections of insulin (2) and support for insulin by continuous subcutaneous insulin infusion (3), including most recently at EASD (Horikowa 2018).

Many individuals have benefited from the structure of the DCAS clinic for the basis of their Doctoral theses eg. Pham-Short, Benitez-Aguirre, Lucy Cutler, Yoon Hi Cho, Myra Poon (University of Sydney), Anthony Duffin (University of Western Sydney). It has attracted overseas Paediatric Endocrinologists and medical students to undertake research. It also forms a integral component of contribution of data to ADDN.

**Models of care in tertiary paediatric and adult centres**

PMH: retinal photography, ACR and bloods at clinician's discretion/ad hoc
RCH: retinal photography, ACR and bloods at clinician's discretion, also neuropathy testing LCCH: retinal photography, ACR and bloods at clinician's discretion
WCH: retinal photography, ACR and bloods at clinician's discretion Monash: no retinal photographs, ACR and bloods at clinician's discretion

Westmead Hospital (adults): no specific clinic, community based screening
RNSH (adults): clinician led clinic, with nurse performing retinal photographs, endocrinologist grading of photos for retinopathy and referral to ophthalmologist as indicated. Referrals – internal (from other endocrinologists) and external (GPs, private endos).
RMH: retinal photographs reviewed by endocrine registrars

**Summary:**
CHW has the only comprehensive complications screening service among paediatric diabetes centres in Australia. The higher rates of complications observed suggest under-ascertainment in centres where there is not a co-ordinated screening program. ADDN data indicate low rates of complications screening. However the AdDIT screening study (n=3,353 screened, age 10 to 16 years); showed ~0.7% had persistent microalbumunuria and 38% had upper tertile ACR (which confers a significantly increased risk of subsequent development of albuminuria) (4). Of those in the observational cohort of AdDIT, moderate retinopathy was present in 19% (upper tertile ACR) and 8% (lower tertile ACR). This strongly suggests that co-ordinated screening, whether as part of research or a clinical service, results in greater ascertainment of complications, thereby facilitating earlier referral. The current model has led to advancing clinical care and knowledge, and is referred to by international centers (5) changing practice (6).

We recognise that some Endocrinologists do not wish to refer to an Endocrinologist Coordinated Complications assessment and are therefore prepared to agree to an alternate (not a replacement) Nurse-coordinated Complications assessment service. The exact nature of that service will need to be negotiated, but in this situation, the referring Endocrinologist will be responsible for supervision and interpretation of all the test results done in that clinic including potentially the interpretation of the retinal photographs.

A third, alternative model, would be for clinicians who currently do not participate in the DCAS clinic to schedule a complications clinic visit in the department where their patients would undergo retinal photography and neuropathy assessment. This could replace one clinic visit per year in DOPD and could be co-ordinated with allied health appointments as needed.

**Strengths and weaknesses of alternative models of complications assessment at CHW:**

| Model | Strengths | Weaknesses |
|---|---|---|
| Current model | Co-ordinated assessment and reporting<br>Clinicians with expertise in complications review results and arrange follow up as required<br>Higher rate of screening and detection of complications compared with other paediatric units in Australia<br>Provides assessment of high risk externally referred patients, including those cared for by general paediatricians and outreach patients<br>Opportunity to recruit patients to specific research projects, including ADDN, Biobank, Bone health in diabetes<br>Review knowledge of sick day management and hypoglycaemia events. | Lack of input from clinicians who do not participate in DCAS (although welcomed);<br>Perceived 'exclusivity'<br>Lack of formal training in complications for registrars and fellows<br>Follow up of abnormal results requires communication from DCAS clinician as results are not sent to the primary clinician's message centre<br>Delay in reporting due to delays in eye grading.<br>Reports scanned into Powerchart |
| Nurse led clinic | No need for medical referrals<br>Individual SMP can determine which tests are performed<br>No reports so no delays in Pathology reporting / interpretation | Further delays in retinal grading as orthoptist is research based<br>Requirement for primary clinician to be available/contactable if medical input required (or additional burden for registrar/on call clinician)<br>Lack of consultation with paediatric endocrinologist with expertise in diabetes complications<br>ADDN data collection likely to be affected due to time constraints of nurse<br>Downgrading of importance of complications screening to family<br>Attendance lower in Nurse-led clinics<br>Loss of revenue for the Hospital and Department<br>Endocrinologist will need to review the retinal images on Image-lite software in the Eye Room |

**References**


1. Thamotharampillai K. Decline in Neurophysiological Function After 7 Years in an Adolescent Diabetic Cohort and the Role of Aldose Reductase Gene Polymorphisms. Diabetes Care. 2006 Sep 1;29(9):2053–7.

2. Downie E, Craig ME, Hing S, Cusumano J, Chan AKF, Donaghue KC. Continued reduction in the prevalence of retinopathy in adolescents with type 1 diabetes: role of insulin therapy and glycemic control. Diabetes Care. 2011 Nov;34(11):2368–73.

3. Zabeen B, Craig ME, Virk SA, Pryke A, Chan AKF, Cho YH, et al. Insulin Pump Therapy Is Associated with Lower Rates of Retinopathy and Peripheral Nerve Abnormality. PLoS ONE. 2016;11(4):e0153033.

4. Marcovecchio ML, Jones T, Daneman D, Neil A, Dalton RN, Deanfield J, et al. Adolescent Type 1 Diabetes Cardio-Renal Intervention Trial (AdDIT): Urinary Screening and Baseline Biochemical and Cardiovascular Assessments. Diabetes Care. 2014 Mar;37(3):805–13.

5. Hirsch IB. Glycemic Variability and Diabetes Complications: Does It Matter? Of Course It Does! Diabetes Care. 2015 Jul 23;38(8):1610–4.

6. Pham-Short A, C Donaghue K, Ambler G, K Chan A, Hing S, Cusumano J, et al. Early elevation of albumin excretion rate is associated with poor gluten-free diet adherence in young people with coeliac disease and diabetes. Diabetic Medicine. 2013 Oct 30;31(2):208–12.



Authors: KC Donaghue and ME Craig October 18, 2018

## Appendix 2: A detailed listing of all of the pros and cons of possible models of care as listed by participants.

| **Model 1 – Existing Model – nurse screening and medical consultation for all patients**<br>• Internal CHW patients and external patients are referred to a DCAS endocrinologist (Prof Donaghue or Craig)<br>• DCAS nurse performs screening tests under supervision of DCAS endocrinologist<br>• Referring doctor receives printed report when available.<br>• Patient can be offered participation in any currently approved research studies that are enrolling | |
|---|---|
| Pros put forward | Cons put forward |
| • Co-ordinated assessment and reporting<br>• Clinicians with expertise in complications review results and arrange follow up as required<br>• Higher rate of screening and detection of complications compared with other paediatric units in Australia<br>• Provides assessment of high risk externally referred patients, including those cared for by general paediatricians and outreach patients<br>• Opportunity to recruit patients to specific research projects, including ADDN, Biobank, Bone health in diabetes<br>• Review knowledge of sick day management and hypoglycaemia events.<br>• Endocrinologist input for externally referred patients who do not have a regular or local treating endocrinologist | • Lack of input from clinicians who do not participate in DCAS (although welcomed);<br>• Perceived 'exclusivity'<br>• Lack of formal training in complications for registrars and fellows<br>• Follow up of abnormal results requires communication from DCAS clinician as results are not sent to the primary clinician's message centre<br>• Delay in reporting due to delays in eye grading.<br>• Reports scanned into Powerchart<br>• Duplication of services for CHW patients, as the patient already has a specialist treating endocrinologist who provides continuity of care and can oversee the patient's screening and results<br>• Inefficient use of senior medical resources<br>• Undermines patient's treating endocrinologist by inferring that they do not have sufficient expertise to supervise and interpret screening<br>• Confusing for families<br>• Results do not return directly to the treating endocrinologist via the Message Centre (inefficiency and medico-legal risk)<br>• Results in a process that is negative for the patient journey and experience and negative for the treating endocrinologist<br>• Not standard practice – no other Paediatric Endocrinology unit in Australasia has a duplicate internal specialist referral model |

## Model 2 – Dual model – nurse run for internal referrals and continuing medical consultations for external referrals

**Internal CHW patients**

- referred by usual treating endocrinologist to the nurse run DCAS clinic
- Usual treating endocrinologist orders tests and reviews results via Powerchart Message Centre
- Urgent issues reported to the treating endocrinologist or, endocrinologist on-call
- If the patient has a CHW endocrinologist, external referrals are not needed and are declined.

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- Patients referred for a DCAS medical assessment plus screening tests performed by the nurse in DCAS
- Results reported back to the DCAS endocrinologist who in turn reports them to the referring doctor

| Pros put forward | Cons put forward |
|---|---|
| • No need for medical referrals for internal patients<br>• Individual SMP can determine which tests are performed<br>• No reports so no delays in Pathology reporting / interpretation<br>• Better continuity of care for patient and their usual treating endocrinologist<br>• No duplication of specialist service / billing<br>• More efficient use of senior medical staff resources<br>• Results return to treating endocrinologist's Message Centre in Powerchart - more efficient and reduces risk of missed results<br>• Consistent with standard practice in Australasia<br>• Patients can still be asked to participate in any approved research studies that are enrolling, with add-on protocols<br>• ADDN / visit data still collected through clinic or nurse DCAS visits<br>• Screening protocols devised by DCAS endocrinologists, applied by nurse | • Further delays in retinal grading as orthoptist is research based<br>• Requirement for primary clinician to be available/contactable if medical input required (or additional burden for registrar/on call clinician)<br>• Lack of consultation with paediatric endocrinologist with expertise in diabetes complications<br>• ADDN data collection likely to be affected due to time constraints of nurse<br>• Downgrading of importance of complications screening to family<br>• Attendance lower in Nurse-led clinics<br>• Loss of revenue for the Hospital and Department<br>• Endocrinologist will need to review the retinal images on Image-lite software in the Eye Room<br>• None |

## Model 3 – Dual model – nurse run for internal referrals and medical referral optional for external referrals

**Internal CHW patients**

- referred by usual treating endocrinologist to the nurse run DCAS clinic
- Usual treating endocrinologist orders tests and reviews results via Powerchart Message Centre
- Urgent issues reported to the treating endocrinologist or, endocrinologist on-call
- If the patient has a CHW endocrinologist, external referrals are not needed and are declined.

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- External doctors can refer for nurse coordinated screening without DCAS medical consultation
- results are reported directly back to referring doctor

| Pros put forward | Cons put forward |
|---|---|
| • As per relevant elements of model 2 | • As per relevant elements of model 2 |

## Model 4– Dual model – option of nurse run screening or medical referral for internal referrals and medical referral for external referrals

**Internal CHW patients**

- Internal patients who have a CHW endocrinologist could be referred for a DCAS medical assessment plus nurse coordinated tests at the discretion of the CHW endocrinologist

**External patients meeting eligibility criteria WITHOUT a CHW endocrinologist**

- Patients referred for a DCAS medical assessment plus screening tests performed by the nurse in DCAS
- Results reported back to the DCAS endocrinologist who in turn reports them to the referring doctor

| Pros put forward | Cons put forward |
|---|---|
| • As per relevant elements of model 2 | • As per relevant elements of model 2 |