First Steps Toward an Integrated Care Model for Diabetes. NSLHD

Greg Fulcher. OAM.MB.BS.MD.FRACP.
Clinical Professor of Medicine Usyd.
Senior Staff Specialist RNSH.
Clinical Director Chronic and Complex Medicine NSLHD
NSLHD: The challenge

Series of disconnected parts

- Hospitals
- Specialist’s offices
- Doctors’ offices
- Group practices
- Community agencies
- Private sector organisations
- Public health departments etc.
SO FAR, SO GOOD
• “Diabetes Health Assessment Service” (Sydney Diabetes Health Assessment Unit)
• High risk foot service
• Screening program for diabetes in hospital
<table>
<thead>
<tr>
<th></th>
<th>Mean ± SD (N=625, 279F, 346M)</th>
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<tbody>
<tr>
<td>Age (yr)</td>
<td>65 ± 12</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>29.5 ± 5.9</td>
</tr>
<tr>
<td>BPs (mmHg)</td>
<td>139 ± 21</td>
</tr>
<tr>
<td>BPd (mmHg)</td>
<td>76 ± 11</td>
</tr>
<tr>
<td>T.Chol (mM)</td>
<td>4.9 ± 1.0</td>
</tr>
<tr>
<td>TG (mM)</td>
<td>1.8 ± 1.3</td>
</tr>
<tr>
<td>HDL-C (mM)</td>
<td>1.2 ± 0.4</td>
</tr>
<tr>
<td>LDL-C (mM)</td>
<td>2.8 ± 0.8</td>
</tr>
<tr>
<td>Non-HDL-C (mM)</td>
<td>3.6 ± 1.0</td>
</tr>
<tr>
<td>AER (uM)</td>
<td>147 ± 778</td>
</tr>
<tr>
<td>CVD Risk*</td>
<td>19.5 ± 20.1</td>
</tr>
<tr>
<td></td>
<td>Total (n=625)</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>Smoking</td>
<td>7.2% (n=45)</td>
</tr>
<tr>
<td>BP&lt;130/85</td>
<td>41.4% (n=259)</td>
</tr>
<tr>
<td>LDL &lt; 2.6mM</td>
<td>41.3% (n=258)</td>
</tr>
<tr>
<td>LDL 2.6-3.4mM</td>
<td>37.8% (n=236)</td>
</tr>
<tr>
<td>LDL &gt; 3.4mM</td>
<td>20.3% (n=127)</td>
</tr>
<tr>
<td>HbA1c &lt; 6.5%</td>
<td>43.8% (n=274)</td>
</tr>
<tr>
<td>HbA1c 6.5-7.0%</td>
<td>13.8% (n=86)</td>
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<tr>
<td>HbA1c 7-8%</td>
<td>22.2% (n=139)</td>
</tr>
<tr>
<td>HbA1c &gt; 8.0%</td>
<td>20.2% (n=125)</td>
</tr>
<tr>
<td>Aspirin Use</td>
<td>28.2% (n=176)</td>
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“Diabetes Health Assessment Service” (Sydney Diabetes Health Assessment Unit)
The CDMP connects the person and their carer with appropriate primary, community and acute care services by:

- Proactively identifying people most in need of and likely to benefit from the program
- Undertaking comprehensive assessment (SDHAU)
- Regularly monitoring and reviewing participants
- Supporting shared care planning (Nurse Practitioner)
- Delivering care coordination and self-management support services (CNS)
Type 2 diabetes - Dual oral therapy (2002)

Non-proliferative diabetic retinopathy (Type 2 DM)

Medications (Unassigned)
- Amaryl Tablets 3 mg daily
- Diabex XR Extended release tablets 500 mg 2 tablets daily

Dyslipidaemia
- takes a statin

Hypertension
- takes an ACE + Aspirin

COMPLICATIONS SCREEN

Eyes (as of 12 Dec 2008)
- Examined by: Eye Clinic
- Status: Diabetic retinopathy present
- Verification: Self-reported

Renal status (as of 12 Dec 2008)
- 12/12/08
- No diabetic renal disease

Feet (as of 12 Dec 2008)
- Deformity: Nil
- Ulcers: Never
- Nerves: Absent ankle jerks but normal sensation
- Vascular compromise
- Risk

Comment (12 Mar 2009): This patient can feel the monofilament.
Figure 2 Predictive factors of poorer health outcomes

**Socio-demographic and Social Risk Factors**
- Demographic (e.g. age, sex)
- Socio-economic status and disadvantage
- Rurality
- Ethnicity including Aboriginal and Torres Strait Islander status

**Clinical Risk Factors**
- Comorbidities and multi-morbidity
- Medication use
- Self-rated health status
- Functional status (including falls, disability)
- Cognitive markers
- Utilisation of primary and hospital services
Figure 4 Kaiser Permanente Pyramid and HARP (Victoria) model of care

Level 1
People with chronic diseases and complex needs who frequently use hospitals and meet the HARP eligibility screen

Level 2
People with chronic diseases and complex needs who use hospital or are at risk of hospitalisation and meet the HARP screen

Level 3
People with chronic diseases and/or complex needs who can be managed in the community
- Early Intervention in Chronic Disease (EliCD)
- Diabetes self-management (DSM)

Level 4
Whole-population health promotion services
- ‘Go for your life’ program

Go for your life

HARP

EliCD

Intensive care coordination
- Care across the continuum
- Tertiary and secondary prevention
- Enrolled patient population
- Comprehensive assessment and care planning
- Specialist medical and GP management
- 24-hour advice
- Additional services where appropriate
- Self-management approach
- Comprehensive hospital discharge planning

Usual care
- GP care
- Self-management programs
- Access to mainstream community services
- Generic telephone advice

Primary prevention
For example: obesity reduction, smoking cessation, health promotion
In summary, patients with high levels of diabetes distress or poor glycemic control at entry into health coaching were the ones who benefitted most from taking part in the program.

On the basis of our results, we propose that such patients be routinely offered additional health coaching or more specialized chronic disease management, rather than providing all patient populations with interventions that may not be relevant or efficacious.

Personalized medicine is increasingly being recognized as an effective way of delivering health care, and identification of patients with diabetes most responsive to particular education strategies will contribute toward the optimization of health care resources.
ACI Endocrine Network
NSW Model of Care for People with Diabetes Mellitus

Date: April 2014
Version: 0.9
Release Status: Draft
Release Date: [Date]
Author: Endocrine Network
Owner: Agency for Clinical Innovation
## Key Elements

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<tbody>
<tr>
<td>General Population</td>
<td>At Risk of Diabetes Undiagnosed Diabetes</td>
<td>Newly Diagnosed &amp; Existing Diabetes</td>
<td>Established Complications</td>
<td>Acute Episodes</td>
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Northern Sydney Diabetes Services Implementation Framework

NSLHD Chronic & Complex Medicine Network
NSLHD/ACI Focus Group

Service gap Analysis (Northern Beaches)
• accessible, routine, systematic screening for early detection of complications
• access to specialist coordinated multidisciplinary team management for type 1 adults
• rapid access services
• insulin initiation and stabilisation services
Diabetes Rapid Access Clinic

Referral Criteria:

• Emergency room presentation for diabetes review that requires urgent consultation where this is appropriately provided in an out- as opposed to in-patient setting. Such referrals would come from either the on-call Endocrinologist or Advanced Trainee and would be for a range of pathologies including the below
  • Recent severe and/or frequent hypoglycaemia
  • Secondary hyperglycaemia from acute illness, where outpatient management is possible
  • Patients with hyperglycaemia requiring urgent insulin start or review of insulin management, please note non urgent insulin initiation and stabilisation will be referred to insulin stabilisation clinic
  • Hospital discharge follow-up for complicated patients (multiple co morbidities, complex social circumstances, steroids) please note follow-up of inpatient insulin initiation will be done via the insulin stabilisation clinic
  • Referrals may also be received from other RNSH Nurse Practitioners (Renal, Stroke and Wound Care) and high-risk foot clinic.
  • This may need to be defined a bit more (could be discussed following feedback)
Evaluation of the performance and outcomes for the first year of a diabetes rapid access clinic

Neroli Newlyn¹, Rachel T McGrath¹,², Gregory R Fulcher¹,²

<table>
<thead>
<tr>
<th>Cost analysis</th>
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<tr>
<td>No. of hospitalisations prevented†</td>
<td>15 (25%)</td>
</tr>
<tr>
<td>Hospitalisation cost per day</td>
<td>$1245</td>
</tr>
<tr>
<td>Average length of stay, days</td>
<td>2.5</td>
</tr>
<tr>
<td>Total hospitalisation cost that would have been incurred</td>
<td>$46 687.50</td>
</tr>
<tr>
<td>Cost of nursing at DRAC</td>
<td>$23 339.52</td>
</tr>
<tr>
<td>Cost management difference</td>
<td>$23 347.98</td>
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</tbody>
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Insulin Stabilisation Clinic

Aim:
• Provide a (nurse led) insulin education, stabilisation and short term follow-up service for patients requiring insulin management who are to be reviewed by an Endocrinologist in Clinic 1 or by GPs in the community.
• Patients will be taught the self-management principles of insulin adjustment utilising established insulin-adjustment algorithms.

Referral Criteria:
• Patients seen in clinic 1 or SDHAU requiring insulin initiation or stabilisation including:
  – Patients discharged from wards where insulin was initiated or stabilised, awaiting Clinic 1 review
  – Patients already taking insulin whose glycaemic control is poor and who require troubleshooting, optimising of therapy or education.
Primary Care Diabetes Steering Group

The key areas identified as a priority by the Primary Care Diabetes Steering Group are

• The Management of Diabetes in Vulnerable Populations. These groups include
  – Gestational Diabetes Mellitus (GDM) in specific CALD groups
  – People with mental health issues
  – Aboriginal and Torres Strait Islander populations (particularly on the Northern Beaches)
  – Young people in transition between paediatric and adult services

• Capacity Building in General Practice
Project Management Plan
Gestational Diabetes in CALD groups

NSLHD Chronic & Complex Medicine Network
Sydney North Health Network
Gestational Diabetes in CALD groups
GDM in CALD Groups

Project objective(s)

• Increased the understanding of GDM of pregnant women from CALD backgrounds in Northern Sydney on presentation to their General Practitioner or specialist obstetric clinics

• Increased numbers of pregnant women from CALD communities (planning to deliver at a NSLHD hospital) screened for GDM in early pregnancy

• Increased numbers of women from CALD communities who have been pregnant have been followed up
Health Pathways

Criteria for referral to Diabetes Clinics in NSLHD
A patient with Type 2 Diabetes referred by their GP to Diabetes Clinics in NSLHD should meet one of the following criteria:

- failure to attain individualised glycaemic/HbA1c targets
- failure to respond to glucose-lowering medications
- multiple drug intolerances to glucose-lowering medications, or contraindications
- recurrent or severe hypoglycaemia
- development of diabetes complications
- hyperglycaemia during hospitalisation
- preparation for surgery
- Pregnancy (+/-)
- suspicion of unusual variants, such as LADA, MODY or secondary diabetes

The GP and patient can expect that the patient may be discharged from the Diabetes Clinic back to the care of the GP for ongoing management of diabetes once stabilised.