AusCDEP: Competency-based online diabetes CPD for health professionals

NSW Diabetes Forum
24 March 2017
Sydney

Fletcher T, Ward C, Daventport K, Smedley P, Simmons D.
Cambridge Diabetes Education Program (CDEP)

An online inter-professional competency based diabetes education program for all health professionals working with people with diabetes.

Seeks to improve the quality of care for people with diabetes.

Stand alone or complements/reinforces face to face
Cambridge Diabetes Education Program

• Developed by expert clinicians from Addenbrookes Hospital, Cambridge
• Endorsed by Diabetes UK, The Association of UK Dieticians and Cambridge University Health Partners
• We are adapting to the Australian context as AusCDEP
Rapid Response Report
NPRA/2010/RR4013
from reporting to learning

Safer administration of insulin

Issue
Checks in the administration of insulin by clinical staff are common. In certain cases this may be carried out by a nurse or other non-prescribing, non-monitoring staff and not in duplicate checks.

Examples 3000 insulin syringes have been identified:

- 342 units of insulin were administered with a 1:1 or 1:10 dilution.
- 56 units were administered with a 1:1 or 1:10 dilution.
- 30 units were administered with a 1:1 or 1:10 dilution.

Some of these events have resulted from medication leaking in the process of needles by healthcare professionals.

Patient safety incidents
Between April 2009 and August 2009 the National Patient Safety Agency (NPSA) received 398 reports concerning injection errors from wards and other units. In 20 cases (5%) the needle was not used. In 18 cases (4.5%) the needle was used and then put into a sharps bin.

Out of 370 events, 306 (82%) were associated with needlestick injuries, 74 (20%) were associated with hypoglycaemia and 74 (20%) were associated with needlestick injuries.

Talk to someone about diabetes
0345 123 2393

Poor state of diabetes care "costing lives and money"

Wednesday 14 January 2015

The poor state of diabetes healthcare in England is leading to avoidable deaths, record rates of complications and huge costs to the NHS, according to a report published today (Wednesday 14 January) by Diabetes UK.

The charity’s annual State of the Nation report (PDF: 541KB) shows there has been very little change in diabetes healthcare in the past year, with 40 per cent of hospitals unable to provide the minimum six-monthly review and care plan for patients.

The report also highlights some aspects of care where investment has been made over recent years, including 24/7 nurses and services.
UK diabetes context in which CDEP emerged

Diabetes UK Position Statement: Competency Frameworks in Diabetes

D. Simmons, T. Deakin, N. Walsh, B. Turner, S. Lawrence, L. Priest, S. George, G. Vanterpool, J. McArdle, A. Rylance, G. Terry and P. Little

National Diabetes Competency Frameworks UK

UK developed:

• Nursing/HCA: Training, Research and Education for Nurses in Diabetes – UK (TREND-UK)
• Podiatry: (Scotland 2011)
• Dietetics: An Integrated Career and Competency Framework for Dieticians and Frontline Staff (Photos)
### Competency level and roles

<table>
<thead>
<tr>
<th>Level</th>
<th>CDEP level</th>
<th>TREND Diabetes Competencies</th>
<th>Potential Role or Job Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Core</td>
<td>Unregistered practitioner (Bands 2-4) or minimum competencies for any staff involved in the healthcare of people with diabetes</td>
<td>Receptionist, Healthcare Assistant, Porter, Podiatrist, Orthotists, Optometrists, Plaster Technician, Retinal Photographers, Phlebotomists, Dietetic Assistant, Podiatry Assistant, etc</td>
</tr>
<tr>
<td>2</td>
<td>Intermediate</td>
<td>Competent nurse Non-Diabetes Specialist Dietician</td>
<td>Ward Nurse, Practice Nurse, Residential Home Nurse, Prison Nurse, Mental Health Nurse, District Nurses, Minor Injury Nurses, Paramedics, A&amp;E staff, GPs, Dietitian, Podiatrist delivering Diabetes Foot Care, Matrons, Discharge Lounge Staff, Day Case Surgery Nurse, etc</td>
</tr>
<tr>
<td>3</td>
<td>Diabetes Specialist</td>
<td>Experienced/proficient nurse Diabetes Specialist Dietician (Band 6)</td>
<td>Diabetes Practice Nurse, Diabetes Dietitian, Junior Diabetes Specialist Nurse, Diabetes GPs, etc</td>
</tr>
<tr>
<td>4</td>
<td>Diabetes Expert</td>
<td>Senior practitioner/expert nurse Advanced Diabetes Dietitian (Band 7)</td>
<td>Diabetes Specialist Nurse, Diabetes Specialist Dietitian, Diabetes Specialist SpR</td>
</tr>
<tr>
<td>5</td>
<td>Diabetes Consultant</td>
<td>Consultant nurse Principal / Consultant Dietitian (Band 8)</td>
<td>Lead / Consultant Specialist Diabetes Nurse, Dietitian or Diabetes Consultant</td>
</tr>
</tbody>
</table>
Accessing quality Diabetes CPD

- Workplace barriers to CPD
  - staff shortage/ increase patient workloads (primary and secondary care)
- Work/life balance: Tired/time poor health professionals (prefer CPD in work time) (Coventry et al. 2015)
- Prioritise patient care over education
Topics

Online competency-based tool for Diabetes

LEARNING TOPICS...

Diabetes
Please select from the topics on the right, you will be taken to the competencies section and into the quiz questions.
Topics are shown as follows
✓ Completed topics
Incomplete topics

Select a topic to focus your learning on

What is Diabetes
Hypoglycaemia
Hyperglycaemia
Screening, Prevention and Early Detection of Type 2 Diabetes
Oral Therapies
Injectable Therapies
Promoting Self-care
Nutrition (TREND nursing diabetes competencies)
Nutrition and Physical Activity (QoF DM13 requirements)
Foot Care
Blood Glucose and Ketone Monitoring
Pregnancy - Pre-conception Care
Managing Diabetes in Hospital
Managing Diabetes in Residential and Nursing Homes
Carbohydrate Counting and insulin Injection Dose Adjustment
Your Topic...

Diabetes

What is Diabetes

Please select a competency on the right by clicking on it. This will take you directly into the assessment section.

Should you wish to do some reading before taking the quiz, please review the resources below.

Learning Resources

Click here to view

Please select a competency...

✓ Know that there are different types of diabetes
✓ Know that there are different types of treatment for diabetes
✓ Be able to explain in simple terms what diabetes is.
✓ Know that diabetes is a serious, life threatening condition that causes acute or complications
✓ Be able to differentiate between Type 1, Type 2 and gestational diabetes and their long term consequences
✓ Be able to refer patients with diabetes to appropriate specialist teams according to their needs
Q2/2 Which of the following could be common signs or symptoms of hypoglycaemia?

☑ Irritable
☑ Pale
☑ Shaky
☑ Sweaty
☑ Thirsty

You may select more than one answer

FINISH »
Q4/4 An older person, known to have diabetes managed with insulin, suddenly looks pale, grey and sweaty.

Which of the following would you ensure is carried out first to exclude the most likely cause of this person’s symptoms?

- [ ] Do an ECG to exclude a possible heart attack.
- [x] Perform a blood glucose test to exclude hypoglycaemia.
- [ ] Request a blood test to exclude the presence of anaemia.
- [ ] Test a urine sample to exclude a urinary tract infection.

[FINISH]
Assess suitability of drugs depending on current eGFR level and specific contraindications.

You answered: 3 Right / 3 Wrong

### Q1
Normal kidney function is generally accepted to have an estimated glomerular filtration rate (eGFR) of greater than 90 mL/min.

Chronic kidney disease is generally diagnosed when a person has an eGFR less than ...

<table>
<thead>
<tr>
<th>15 mL/min for more than 3 months.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORRECT  This statement was false</td>
</tr>
<tr>
<td>30 mL/min for more than 3 months.</td>
</tr>
<tr>
<td>INCORRECT This statement should have been true</td>
</tr>
<tr>
<td>60 mL/min for more than 3 months.</td>
</tr>
<tr>
<td>INCORRECT This statement should have been true</td>
</tr>
<tr>
<td>90 mL/min for more than 3 months.</td>
</tr>
<tr>
<td>CORRECT  This statement was false</td>
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</table>

### Q2
Impaired renal function can impact on the efficacy of medication in numerous ways resulting in the person with diabetes requiring a change in treatment to ensure their diabetes is correctly managed. For example: the absorption of drugs can be impacted by chronic kidney failure due to potential interactions with other drugs like phosphate binders as well as other concurrent diabetes complications such as gastroparesis.

In what other ways can kidney failure contribute to changes in drug pharmacokinetics?

Enlarged excretion of active drug metabolites via the kidneys.
An older person, known to have diabetes managed with insulin, suddenly looks pale, grey and sweaty.

Which of the following would you ensure is carried out first to exclude the most likely cause of this person’s symptoms?

- Perform a blood glucose test to exclude hypoglycaemia.
  - CORRECT This statement was true

- Test a urine sample to exclude a urinary tract infection.
  - CORRECT This statement was false

- Do an ECG to exclude a possible heart attack.
  - CORRECT This statement was false

- Request a blood test to exclude the presence of anaemia.
  - CORRECT This statement was false

Learning resources for this section...

1. Hypoglycaemia (Diabetes Australia)
2. Older people and diabetes (Diabetes UK)
3. Hypoglycaemia management: adult inpatient (Campbelltown)
4. Understanding hypoglycaemia in hospitalized patients (Diabetes Management Journal)
5. The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus (ABDS 2013)
6. Hypoglycaemia (Monashur Diabetes Service)
7. Hypoglycaemia in the elderly with diabetes in hospital: a literature review (A2EIA)
Hypoglycaemia

Hypoglycaemia, sometimes called a hypo or low, is a condition that occurs when a person's blood glucose level (BGL) has dropped too low. Below 4mmol/L, it is important to treat a hypo quickly to stop the BGL from falling even lower and the person becoming seriously unwell.

Hypoglycaemia can make it hard to concentrate and carry out everyday activities. Some activities, such as driving and operating machinery, are not safe if BGLs are less than 5.6mmol/L.

Hypoglycaemia only occurs in people who take insulin or certain other glucose lowering tablets. People who manage their diabetes with healthy eating and physical activity are not at risk of a hypo.

Causes of hypoglycaemia

Hypoglycaemia can be caused by one or a number of events, such as:

- Too much insulin or other glucose lowering diabetes tablets
- Delaying or missing a meal
- Not eating enough carbohydrate
- Unplanned physical activity
- More strenuous exercise than usual
- Drinking alcohol - the risk of hypoglycaemia increases, the more alcohol you drink
Understanding hypoglycemia in hospitalized patients

SUMMARY

Controlling blood glucose in hospitalized patients is important as both hyperglycemia and hypoglycemia are associated with increased cost, length of stay, morbidity and mortality. A limiting factor in stringent control is the concern of iatrogenic hypoglycemia. The association of hypoglycemia with mortality has led to clinical guideline changes recommending more conservative glycemic control than had previously been used. Healthier, stable patients may be managed with stricter control and hypoglycemia monitored more closely. However, evidence shows that hypoglycemia may be a cause of mortality. Therefore, hospital mortality rates are higher than national averages.

Hypoglycaemia in the elderly with diabetes in hospital: a literature review

INTRODUCTION

Diabetes Control and Complication Trial (DCCT), and the United Kingdom Prospective Diabetes Study (UKPDS) suggest tight glycemic control can reduce the incidence of long term diabetes complications. Unfortunately, the risk of hypoglycemia increases with tight glycemic control. Hypoglycemia is an unwanted adverse effect for people with diabetes of all ages, and especially for those aged above 60 years old. It is estimated that 6-6.4% of patients with diabetes aged above 60 years had at least one episode of hypoglycemia during their hospital admission.

CLINICAL MANIFESTATIONS

Clinical manifestations of hypoglycemia vary significantly and can be subtle or significant.
CDEP /AusCDEP

- Provides ‘bite-size’ competency specific learning relevant to staff’s level and roles (fast, clinically, contextually relevant).

- Assessment then Content (saves sitting or working through areas people already know)
Series of questions:

- *Screens competency* (measurable and requires 100% mastery)- progress quickly to next level if you know the answers

- De facto *learning needs assessment*- wrong answers highlights gap in knowledge
<table>
<thead>
<tr>
<th>Topic</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>What is diabetes</td>
<td>1 hour 30 mins</td>
</tr>
<tr>
<td>Hypoglycaemia</td>
<td>2 hours</td>
</tr>
<tr>
<td>Hyperglycaemia</td>
<td>1 hour 30 mins</td>
</tr>
<tr>
<td>Oral Therapies</td>
<td>2 hours</td>
</tr>
<tr>
<td>Injectable Therapies</td>
<td>1 hour 45 mins</td>
</tr>
<tr>
<td>Promoting self-care</td>
<td>45 mins</td>
</tr>
<tr>
<td>Screening, prevention &amp; early detection of type 2 diabetes</td>
<td>1 hour 30 mins</td>
</tr>
<tr>
<td>Nutrition (TREND)</td>
<td>1 hour 15 mins</td>
</tr>
<tr>
<td>Nutrition &amp; Physical Activity (QoF) for non-dietetics healthcare professionals</td>
<td>5 hours</td>
</tr>
<tr>
<td>Pre-conception care</td>
<td>1 hour</td>
</tr>
<tr>
<td>Managing diabetes in hospital</td>
<td>3 hours</td>
</tr>
<tr>
<td>Blood glucose and ketone monitoring</td>
<td>1 hour</td>
</tr>
<tr>
<td>Managing diabetes in residential or nursing home care</td>
<td>2 hours 15 mins</td>
</tr>
<tr>
<td>Carbohydrate counting and insulin injection dose adjustment</td>
<td>2 hours</td>
</tr>
<tr>
<td>Foot Care</td>
<td>2 hour 15 mins</td>
</tr>
</tbody>
</table>

**Total:** 29 hours 45 mins

*AusCDEP allocated time may vary from the UK*
As a competency based CPD, AusCDEP /CDEP....

....focuses on performance & measurable improvements in practice:

**Outcomes based:** What HCPs ‘know’ and ‘know how’

**Timeframe:** Flexible

**Applied:** Synthesis on knowledge, skills and attitudes

**Interactive:** evidence of impact on professional practice and patient outcomes

**Assessment** Mastery 100% to progress

**Pace** Flexible- learner determined

**Contextual** varies with different settings
Registration

2666 HCPs have registered to date
average 100 new registrations / month

4379 topics completed to date average 6 new certificates / day
85% report improvements in
– competency,
– familiarity with guidelines
– confidence in a given topic.

Ref: Internal Audit – March 2017
AusCDEP access codes provided to SWSLHD and SWSPHN

- Education to primary and secondary care in the SWS.
- Demonstrate understanding of diabetes and quality care across all health care contexts
- Same understanding of treatment pathways
- No wrong door to quality of care
Implementation and Evaluation

• Currently converting the CDEP to Australian context.
• Changes in terminology, guidelines, treatments, resources
• Initial introduction of AusCDEP onto a medical ward at Campbelltown Hospital-qualitative evaluation-focus groups in November 2016
• Introduction to staff of general practices in Picton then Wollondilly- March 2017
• Planned CRCT pilot wards in Campbelltown Hospital
<table>
<thead>
<tr>
<th></th>
<th>Before meals</th>
<th>After meals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UK T1</strong></td>
<td>4-7mmols/L</td>
<td>5-9mmols/L (90mins)</td>
</tr>
<tr>
<td><strong>Aus T1</strong></td>
<td>4-6mmols/L</td>
<td>4-8 mmols/L (120mins)</td>
</tr>
<tr>
<td><strong>UK T2</strong></td>
<td>4-7mmols/L</td>
<td>&lt;8.5mmols/L (90mins)</td>
</tr>
<tr>
<td><strong>Aus T2</strong></td>
<td>6-8mmols/L</td>
<td>6-10mmols/L (120mins)</td>
</tr>
</tbody>
</table>

*Diabetes UK*

*Diabetes Australia*
AusCDEP Qualitative Evaluation:
Introduced to Medical Ward Nov 2016 - Jan 2017

- 18/33 ward nurses registered for two topics *What is Diabetes* and *Managing Diabetes in Hospital* on offer

- 9 nurses - completed both competencies
  - 2 Certificates each

- 9 nurses - none/<3 attempts of competencies (nil competencies)

- Three focus groups - 13/18 staff who registered
Completers

I can make a judgement now when to call the RMO
.....and feel comfortable about giving insulin
Completers

Someone was being discharged and it was after hours, That patient was going home with insulin and not taught how to use the pen. The doctor was saying just teach them with the needle. I said no, pharmacy doesn’t have the syringes. They are going to get a pen, he has never used a pen, how is he going to do it? We had to make this patient stay .. I didn’t have this knowledge before I did the course
Non completers

• I personally found that we probably needed more instruction at the beginning

• It is hard with family and work - it is difficult finding the time - juggling everything

• I did a two hour sit down session and got through a bunch of it, and then maybe another two little bits.
Pilot CRCT: AuCDEP

Pilot a CRCT comparing AusCDEP with face to face diabetes education and education as usual. (intervention is at the ward level)

Outcome measures - length of stay of patients with diabetes on the three wards and patient satisfaction survey.

Awaiting ethics approval – hope to start May 2017
Conclusion

- Complex problems need complex solutions

- The preparation of a well prepared workforce is an important part of the equation.

- AusCDEP designed to improve practice in all clinicians (competency based & inter-professional)

- AusCDEP is accessible/fast CPD
AusCDEP-Want to find out more

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Campbelltown Hospital

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Cambridge Diabetes Education Programme
Australia
References


3. Eastwood-Wilshere N, Estrella J, Simmons D (2016) Campbelltown Hospital Diabetes Inpatient safety Snapshot, Campbelltown Hospital, NSW
References


